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EPA (Environmental Protection Agency) Region VIII Guide to the Development of an Industrial Pretreatment Program
The Rapid City, South Dakota Approach

JRB Associates, Inc.
McLean, VA

Prepared for

Environmental Protection Agency
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EPA Region VIII Guide to the Development of an Industrial Pretreatment Program: The Rapid City, South Dakota Approach

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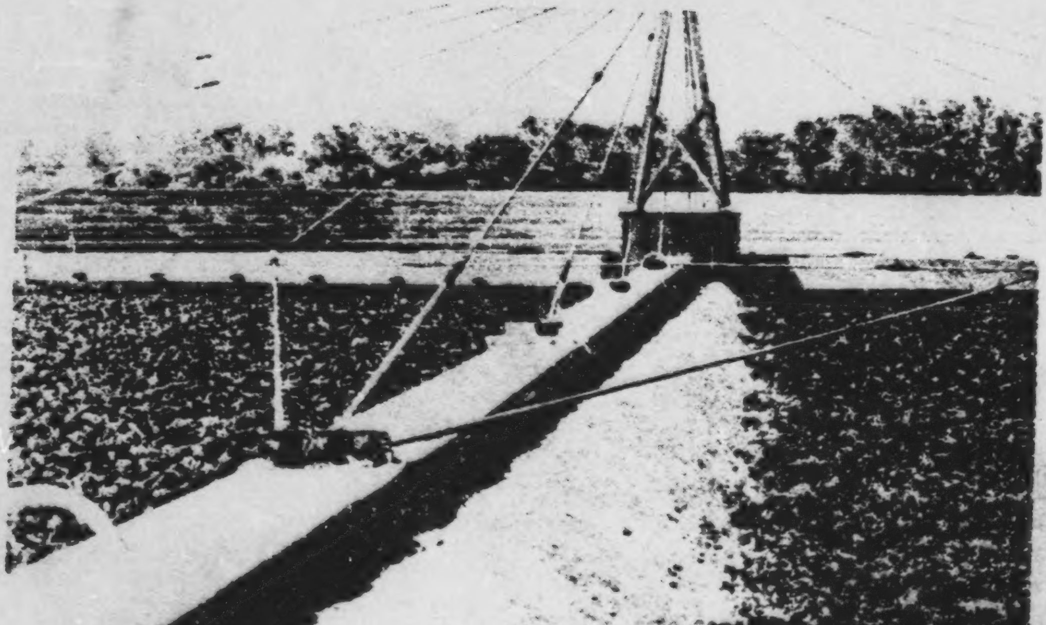

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This document presents a simplified approach to a publicly owned treatment work's (POTWs) development of an Industrial Pretreatment Program within the requirements of the General Pretreatment Program Regulations at 40 CFR 403. The document also includes an example of an actual program developed for the City of Rapid City, South Dakota.

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The Region VIII Office of the Environmental Protection Agency recognized an immediate need for a guidance document to clearly demonstrate the responsibilities of a publicly owned treatment works (POTW) in meeting the General Pretreatment Program requirements. The Pretreatment Program Regulations provide a great deal of latitude in the management structure that a POTW may choose for implementation of its program. However, rather than prepare a cumbersome, possibly overly comprehensive, hypothetical model examining all conceivable pretreatment issues, the Region felt that the presentation of a practical application of the program principals and criteria could more easily be translated and utilized by POTWs undergoing their own pretreatment program developmental processes.

We are pleased to present the following document, based on an actual program application, as an aid to developing an Industrial Pretreatment Program. In order to be readable and concise, the document contains very minimal text and background information and examines only a limited number of possible alternative program designs. Checklists included with this document are extremely valuable in insuring that the fundamental elements of the Pretreatment Program are addressed yet provide flexibiltiy for the POTW to integrate its own management scheme with the program to be undertaken.

Questions with regard to the Pretreatment Program requirements should be addressed to the Compliance Branch of the Water Management Division, telephone (303) 837-4901.

Max H Dodson

Max H. Dodson, Director
Water Management Division
EPA, Region VIII

EPA REGION VIII GUIDE TO THE DEVELOPMENT OF AN INDUSTRIAL PRETREATMENT PROGRAM: THE RAPID CITY, SOUTH DAKOTA APPROACH

March, 1983

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Region VIII

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PREFACE

This document is intended to provide guidance information on developing local pretreatment programs to publicly owned treatment works (POTWs) located in Region VIII of the Environmental Protection Agency (EPA). The document will serve both POTWs which are required to develop a pretreatment program under their NPDES permit and POTWs which wish to establish, on their own, a functional regulatory approach to the control of industrial users of their sewage collection and treatment systems.

The document includes general guidance on developing a pretreatment program and incorporates the actual pretreatment program submission for Rapid City, South Dakota to serve as a model program.

Rapid City was selected by Region VIII for receiving JRB's assistance and as an example for this guidance document after consideration of several possible POTW candidates. Rapid City's size, modest number of industrial users (typical of POTWs in the Region), and willingness to extend their fullest cooperation to EPA on this project were among the reasons for the City's selection. We express our gratitude and appreciation for the City staff's efforts on this project.

The document was prepared by JRB Associates, a private consulting firm in McLean, Virginia, for EPA Region VIII under an EPA contract. JRB assisted Rapid City, South Dakota, in the development and preparation of its Pretreatment Program contained herein.

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THE DEVELOPMENT OF RAPID CITY'S PRETREATMENT PROGRAM

The Rapid City pretreatment program was jointly developed by the City's Wastewater Department and JRB Associates. The program is designed to be comprehensive, understandable, and workable for the City. To correspond with the regulatory intent of 40 CFR 403 requirements, program development was divided into five major tasks:

1. Evaluate POTW characteristics and problems
2. Identify industrial users and characterize their wastewater discharges
3. Design and adopt legal authority necessary to implement and enforce the program
4. Develop procedures to ensure compliance with program requirements
5. Demonstrate sufficient personnel, equipment, and funding to carry out the program.

Rapid City and JRB Associates worked together closely to accomplish the first two tasks--analyzing POTW operations and conducting the industrial waste survey. The City distributed the survey questionnaire and reviewed all responses and relevant records. In addition, the Wastewater Department monitored the POTW influent and effluent along with industrial discharges. To assure complete results, follow-up activities were undertaken and analyses and questionnaires were repeated when necessary.

JRB assisted the City in completing Task 3 by reviewing the Rapid City code and suggesting amendments so that the code would conform to Section 403.8(f) requirements. These amendments were subsequently adopted by the City Council.

The administrative procedures to implement the program (Task 4) were designed by the City and JRB to be practical and compatible with the Wastewater Department's daily operations. These procedures were also designed with sufficient flexibility to be modified (if needed) once the program was underway.

Based on the procedures determined by the Wastewater Department, the levels of staffing and funding for the program were projected (Task 5). Program costs were weighed against the sewer budget to determine if sufficient revenues were available to administer the program. Since Rapid City was already conducting many pretreatment activities, the Department anticipated that no additional personnel or funds would be required to operate the program.

The remainder of the Introduction provides guidance to POTWs in developing their own pretreatment programs, using the Rapid City program as a model. The four basic components of a pretreatment program (representing a consolidation of the five major tasks indicated above) are discussed in general terms followed by checklists which identify the required elements within each component. Additionally, the relevant section of the Rapid City report is referenced as an example of the component being discussed. In this way, Rapid City's program can serve as a workbook to assist other municipalities preparing pretreatment programs. The actual submission for Rapid City is comprised of Section 1 through 6 and Appendixes A, B and C of this report.

Each pretreatment program consists of four basic components:

1. Legal authority (see Chapter 4)
2. Technical information (including industrial wastes, survey, and POTW information) (see Chapters 2 and 3)
3. Program procedures (see Chapter 5)
4. Organization staffing, equipment, and funding (see Chapter 6).

The following subsections outline what is required by Federal regulation to be covered in each component.

LEGAL AUTHORITY

The ability to develop and implement a successful pretreatment program depends upon the existence of an adequate legal base. The local authority must be adequate to 1) assure that industrial users comply with Federal pretreatment standards, 2) to protect the POTWs investment in the treatment plant, 3) to protect the beneficial uses of the waters into which the treatment plant discharges, and 4) to protect the health and welfare of the local citizens. The legal authorities needed to implement a pretreatment program are listed in 40 CFR 403.8(f)(1). In summary, a POTW must be able to:

- Deny or condition new or increased contributions of pollutants or changes in the nature of the pollutants discharged to the POTW
- Require compliance with applicable pretreatment standards and requirements by industrial users
- Control, through permit, contract, or other means, the contribution to the POTW by each industrial user
- Require the development of a compliance schedule by each industrial user and the submission of all notices and self-monitoring reports as necessary to assure compliance
- Carry out all inspection, surveillance, and monitoring procedures to determine compliance, independent of information supplied by the industrial user
- Obtain remedies for noncompliance, including the ability to seek injunctive relief, seek civil or criminal penalties, and/or collect liquidated damages
- Comply with the confidentiality requirements and limitations on data restrictions specified in 40 CFR 403.14.

To document these authorities, the POTW must submit a statement from the city attorney or comparable official that indicates that the POTW has the authority to carry out a pretreatment program. The statement should:

1. Identify the provision of the legal authority under section 403.8(f)(1) which provides a basis for each procedure under section 403.8(f)(2),

2. Identify the manner in which the POTW will implement the program requirements set forth in section 403.8, including the means by which pretreatment standards will be applied to individual industrial users (e.g., by order, permit, ordinance, contract, etc.),

3. Identify how the POTW intends to ensure compliance with pretreatment standards and requirements and to enforce them in the event of non-compliance by industrial users.

Exhibit I of Appendix C of this report contains the City Attorney of Rapid City's legal statement.

In addition, the program submission should include copies of all pertinent statutes, ordinances, and related material affecting the program's legal status. Copies of the supporting legal documents for Rapid City are contained in Appendix C. Table 1 presents a legal authority checklist that itemizes the elements necessary for a thorough and adequate legal authority. By completing this checklist, the POTW can ensure that its submission contains the required legal statements and ordinance provisions.

TECHNICAL INFORMATION

A sound technical information base is necessary to develop and implement a successful pretreatment program. The information available to a POTW will, of course, increase and improve in accuracy with time once a pretreatment program is underway. Nonetheless, the pretreatment program submission must contain sufficient, valid technical information to demonstrate that:

- All industries (and the pollutants they discharge) that might adversely impact the collection system or treatment works have been identified
- The pretreatment program (particularly program procedures) is designed properly to handle the number and type of industrial users
- The local effluent limits are adequate to protect the POTW and allow compliance with its permit.

TABLE 1.

Legal Authority Checklist

	Yes	No	Section of POTW's Submission
PART I. Submission Completeness Checklist (Legal Aspects)			
A. 40 CFR 403.9(b) requirements for submission:			
(1) Does the submission contain a statement from the city solicitor, POTW attorney, or other official?	___	___	______
(2) Does the submission contain a copy of every legal authority source cited in the attorney's letter or necessary for program implementation? [e.g., ordinances, contracts, status, joint agreements, permits, regulations, etc.]	___	___	______
(3) Does the submission contain statements of commitment from all local boards/bodies responsible for supervising/funding the pretreatment program?	___	___	______
*(4) If any of the legal authorities cited are vested in a particular official's discretion, is there a statement of endorsement from such official?	___	___	______
B. 40 CFR 403.9(b)(1) requirements for attorney's letter:			
(1) Does the letter identify the provision of legal authority for each requirement under 403.8(f)(2)?	___	___	______
(2) Does the letter identify the manner in which 403.8 program requirements will be implemented?	___	___	______
(3) Does the letter identify how the POTW intends to ensure compliance?	___	___	______
C. Does the POTW service area include more than one agency, jurisdiction, government, or body? [If yes, legal authorities must be present and adequate in each jurisdiction - use separate Part II forms for each jurisdiction.] (Note that all four checklists must also be evaluated for multijurisdictional issues.)	___	___	______
PART II. Legal Adequacy [403.8(f)(1)]			
Does the POTW have the authority to:			
A. Deny or condition new or increased contributions of pollutants? [403.8(f)(1)(i)]	___	___	______
B. Require compliance with applicable Pretreatment Standards? [403.8(f)(1)(ii)]	___	___	______
• General Prohibitions: pass through, interference [403.5(a)]	___	___	______
• Specific prohibitions [403.5(b)]:	___	___	______
- fire/explosive hazard?	___	___	______
- pH/corrosion?	___	___	______

---

*Indicates item is recommended, but not mandatory.

TABLE 1.

Legal Authority Checklist (Continued)

	Yes	No	Section of POTW's Submission
- solid or viscous - obstruction/interference?	___	___	________
- flow rate or concentration to cause interference?	___	___	________
- heat - treatment plant influent 40°C (104°F)?	___	___	________
• Locally developed limits? [403.5(c) and (d)]	___	___	________
• National Categorical Standards? [403.6 and 403.8(f)(1)(ii)]	___	___	________
C. Control through permit, contract, etc. to ensure compliance? [403.8(f)(1)(ii)]	___	___	________
D. (1) Require development of compliance schedules for installation of technology? [403.12(b)(7) and (c)]	___	___	________
(2) Require submission of notices and self-monitoring reports including 403.12 requirements (baseline report, compliance schedule progress report, report on final compliance with categorical pretreatment standards, periodic reports on continued compliance, notice of slug loading)?	___	___	________
E. Carry out inspection, surveillance, and monitoring procedures: [403.8(f)(1)(v)]			
• Right to enter premises?	___	___	________
• Right to inspect generally for compliance?	___	___	________
• Right to sample?	___	___	________
• Right to set up and use monitoring equipment?	___	___	________
• Right to inspect and copy records per [403.12(n)]?	___	___	________
F. (1) Obtain remedies for noncompliance: [403.8(f)(1)(vi)			
• Injunctive relief?	___	___	________
• Are the civil or criminal penalties sufficient to bring about compliance or act as a deterrent?	___	___	________
(2) Authority to immediately and effectively halt or prevent any discharge? [403.8(f)(1)(vi)]	___	___	________
G. Comply with confidentiality requirements? [403.14]	___	___	________

Industrial Waste Survey

The Industrial Waste Survey (IWS) is the method by which a POTW gathers relevant data and information on its industrial users. A checklist (Table 2) is provided to assist the reader in determining the completeness and adequacy of this submission. Section 3 outlines how Rapid City conducted its IWS.

Regulation 40 CFR 403.8(f)(2) requires a POTW to identify and locate all possible industrial users that might be subject to the pretreatment program and to identify the volume and character of pollutants discharged to the treatment plant. The objective of these requirements is to ensure that the pretreatment program includes those industries with discharges that might cause pass-through, interference, or sludge contamination problems. The pretreatment program submission must demonstrate that these requirements have been met. The suggested method employed to gather the required information involves the following steps:

- Develop a list of potential industrial users
- Eliminate industrial users that are not a problem
- Survey those that remain to gather pertinent data
- Follow up as necessary to ensure response
- Compile and evaluate information collected.

1. Adequacy of the Survey Master List

The pretreatment program submission must include a master list of all industrial users who discharge to the treatment plant. The sources used in developing this list should also be documented, such as:

- Water use and billing records
- Sewer connection permits
- Business license records
- Chamber of Commerce rosters
- Telephone directory
- Dun's Market Identifiers

TABLE 2.

Technical Information Checklist

	Yes	No	Section of POTW's Submission
I. **Industrial Waste Survey** [403.8(f)(2)(i) and (ii)]			
A. Were the sources used sufficient to assure that all major industrial users were identified and located?	___	___	______
B. Were the criteria used to eliminate industries from the inventory appropriate?	___	___	______
C. Survey Questionnaire:			
(1) Did the POTW obtain the following information (either through the survey or other means):			
• Name?	___	___	______
• Address?	___	___	______
• SIC code(s) or expected classification?	___	___	______
• Wastewater flow rate or water consumption rate?	___	___	______
• Loads and/or concentrations of pollutants in discharge?	___	___	______
• Major products manufactured or services supplied?	___	___	______
*• Residuals generated by IU's disposal methods?	___	___	______
*• Locations of discharge points?	___	___	______
• Description of existing pretreatment facilities and practices?	___	___	______
(2) Is the information current within the last 3 years?	___	___	______
*(3) Does the questionnaire require the signature of an authorized company representative?	___	___	______
D. Follow-Up Procedures			
(1) Did the POTW follow up the questionnaire (with additional written requests, telephone calls, or site visits) to obtain a complete and accurate response?	___	___	______
E. Summary Information			
(1) Were the users classified by industrial category and/or SIC code?	___	___	______
(2) Has the POTW correctly characterized the waste discharged from each industrial user or industrial type? (Refer to Appendix D for comparison).	___	___	______
(3) Does the information obtained demonstrate sufficient characterization of the IU's waste discharges to the POTW?	___	___	______

---

*Indicates item is recommended but not mandatory

- Property tax records
- Other standard listings of industrial firms.

Lists based on current water use, sewer permits, and license records are usually very complete and can be easily adapted for use as a master list.

Since the sources above may include industries of no concern, the POTW will need to establish criteria for eliminating industries from the list. These criteria should be documented in the pretreatment program submission. Valid criteria for exclusion include such situations as:

- A known dry operation
- A direct discharger
- An industry known to discharge only conventional or compatible pollutants at levels that will not harm the treatment plant.

2. Thoroughness of Survey Questionnaire

The POTW must gather discharge information from those industries on the master list. The submission should provide the date and the manner in which the information was gathered, such as:

- Questionnaire mailed to industries
- Telephone calls
- Visit to industries
- Information already on file at POTW.

Independent of how it was collected, the information should be as current as possible, and preferably no more than 3 years old.

A small POTW, with very few industries, may use the telephone or site visits to survey its industries. This approach, however, is usually not feasible for a larger system with many industrial users. The majority of such POTWs will use an industrial waste survey questionnaire to gather information. A copy of the questionnaire should be included in the submission, although this is not a required item.

The program submission should describe the information requested from industrial users, whether by questionnaire, phone call, or visit. At a minimum, the following must be requested:

- Name
- Address
- SIC code(s) or expected classification
- Wastewater flow (or water consumption rate if not known)
- Loads and concentrations of pollutants in discharge
- Major products manufactured or services supplied if constituents are not known
- Description of existing on-site pretreatment facilities and practices.

Although not required, it is recommended that the following information also be requested:

- Locations of discharge points
- Raw materials used or stored at the site
- Flow diagram or sewer map for the industry
- Description of current wastewater treatment practices
- Number of employees
- Operation and production schedules.

A POTW with an existing pretreatment program may have already acquired the information normally gathered by a survey. If the information is current and includes both industrial classifications and the quantification of pollutants, an additional survey is not needed.

3. Response to Survey

The submission should describe the comprehensiveness of the survey by including the number and percentage of industrial users that responded. It should also include a detailed description of follow-up procedures (such as letters of reminder, telephone calls and/or site visits) used to obtain information from industries that were reluctant to respond or returned incomplete responses. While there are no hard and fast rules, a response rate of less than 80 percent would most likely not be adequate to structure an effective program. At such a low rate, there could be little confidence in scaling results upward since a major class or classes of dischargers might be missed or inappropriately represented.

4. Completeness of Summary Information

Unless the State or EPA specifically requests the inclusion of all responses to the Industrial Waste Survey, it is not necessary that they be included in the submission package. It is usually more valuable to have the results of the survey presented in a summary form. Results should be tabulated in a format that contains the number of industries in specific SIC categories and the quantities of specific pollutants entering the POTW system. Appendix D provides the reader with information concerning the 34 categorical industries. D-1 indicates which pollutants are commonly discharged from each category of industries. D-2 is a listing of SIC codes for industries that will be affected by the standards.

Local Discharge Limitations

The major steps toward establishing local effluent limitations include the following:

- Identification of industrial pollutants entering the treatment system
- Identification of past POTW operating problems
- Sampling and analysis to determine fate and effect
- Development of numerical limitations.

A method for establishing local effluent limitations is described in Appendix E. Rapid City was not required to develop local limits and therefore there is not a model section in the Rapid City submission.

40 CFR 403.5(c) requires the POTW to develop and enforce specific limitations to ensure that:

- Pollutants discharged by industrial users do not pass through or interfere with the operation and performance of the treatment plant
- Prohibited discharges (i.e., heat, explosive/fire hazards, corrosive agents, etc.) are avoided.

Specific effluent limits must not be developed and enforced without providing individual notice and an opportunity to respond to any affected party that requests such notification.

PROGRAM IMPLEMENTATION PROCEDURES

Thorough and complete program implementation procedures are a necessary component of a pretreatment program. The minimum procedures that must be documented in the pretreatment program submission are spelled out in 40 CFR 403.8(f)(2). A POTW must be able to:

- Identify and locate industrial users subject to discharge controls
- Identify the character and volume of pollutants discharged to the treatment works
- Notify industrial users of applicable standards and requirements
- Receive and analyze self-monitoring reports and other notices from industrial users subject to national categorical standards
- Randomly sample and analyze industrial effluents and conduct surveillance and inspection activities to identify instances of noncompliance
- Investigate instances of noncompliance
- Provide for public participation, and, at least annually, publish in the largest local newspaper a list of industrial users who were significantly violating applicable pretreatment standards and requirements.

The procedures adopted by a POTW should be well thought out and easy to understand. They should also be clear enough to be followed easily by all users, the public, and POTW staff members. Finally, the procedures should be flexible enough to allow reaction to day-to-day operating situations.

The first two requirements have been covered above in the discussion of the industrial waste survey, thus, this subsection will focus only on updating the IWS and on the remaining five procedural requirements. As in earlier subsections, a checklist (Table 3) is provided at the end to aid in reviewing the procedural aspects of the program submission. Section 5 of Rapid City's program describes how the City carries out its administrative procedures, including permitting, notifying industries of applicable standards, determining compliance, monitoring and inspecting, and encouraging public participation.

Updating the Industrial Waste Survey

The industrial waste survey conducted during the development phase of the local pretreatment program provides the information needed to determine sampling, monitoring, reporting, and compliance requirements. To adequately implement a local pretreatment program, this information has to be updated on a regular basis. Recent data are essential in scheduling pretreatment activities and allocating resources to meet changing program needs. The frequency of update should be compatible with the size and industrial complexity of the community. For larger POTWs in growing communities, the survey may need to be updated almost continuously, and certainly at least on an annual basis. For smaller POTWs comprehensive updating every 2 to 3 years may be sufficient. Rapid City's approach to this procedure is described in Section 4.4.

The submission should include procedures that allow the local pretreatment program to identify and gather information on new industries moving into the POTW service area. Such information should include SIC codes, a description of products and processes, and a description of the characteristics and quantities of pollutants discharged to the POTW. In cases where there are few significant industrial users, the information can usually be obtained satisfactorily through ongoing POTW inspection and monitoring procedures, coupled with a local requirement that new, nondomestic users supply the information to the POTW before connecting to the sewer lines or commencing their discharge. If the POTW requires all of its nondomestic users to obtain a permit to discharge wastewater to the sewer system, the permit application is usually an adequate means of obtaining the data and updating the survey. It is important to reconfirm information supplied in the original application each time a permit is altered or renewed. This will ensure that current information is available on existing dischargers, provided that permits expire and are reissued or renewed on a sufficiently frequent basis.

Notification of Applicable Standards and Requirements

The POTW is responsible for keeping abreast of Federal pretreatment standards and applicable requirements under the Clean Water Act and Resource Conservation and Recovery Act. The POTW is also responsible for notifying any industrial user that may be affected by existing or newly promulgated standards and requirements. These responsibilities must be met throughout the program, and ongoing procedures to do so should be identified in the pretreatment program submission. These procedures should cover:

- Federal categorical standards
- State standards
- Local limitations
- Other pertinent requirements (e.g., user charges).

Procedures for notifying industrial users of pertinent standards and regulatory requirements can include:

- Letters
- Permit/contract conditions
- Permit/contract modifications
- Published notices in newspapers, circulars, etc.

Identification procedures are described in Section 5.3.

Compliance Monitoring Procedures

The procedural requirements associated with self-monitoring reports, random compliance sampling, and noncompliance investigations are closely related. The first two elements form the basis of a program to determine whether industrial users are in or out of compliance with pretreatment standards, limitations, and other requirements. The third element constitutes the POTW's response to potential instances of noncompliance. All three involve sampling and analysis of industrial effluents and data analysis. Under self-monitoring, the sampling and analysis is performed by the industrial user's staff or representative. Under compliance sampling and investigations, the work is carried out by the POTW's staff or authorized representative. Investigatory sampling and analysis must be performed with sufficient care to produce evidence that is admissible in court, and thus, is normally more rigorous than compliance sampling and analysis.

1. Receipt and Analysis of Self-Monitoring Reports and Other Notices

The program submission must describe the POTW's procedures and systems for receiving, analyzing, and storing self-monitoring, compliance schedule, and other reports/notices submitted by industrial users. A systematic approach to managing the data collected from these sources should be evident. The approach may be manual or computerized depending upon the size of the POTW, the number of industrial users, and the nature of the industrial discharges (e.g., priority pollutants). In either case, the system must ensure that reports are received on time, reviewed by a technical specialist, and ultimately filed in a retrievable manner. The system should facilitate a comparison between reported discharge values and discharge standards and limitations contained in permits, ordinances, contracts, and the like. It is also desirable for the system to include comparisions with discharge values measured by POTW personnel or representatives.

Basic features of a workable system include:

- A master list or log of expected reports during a specified time frame (monthly is sufficient)
- A procedure to enter date of receipt of each report (usually on the master list or log)
- A procedure to screen and compare reported values and compliance information with discharge standards and compliance schedules
- A procedure (if the screening is done by a paraprofessional) to refer problem submissions to a technical specialist for more thorough evaluation

- A filing system to ensure that the data are retrievable and maintained for an appropriate period of time (3 years or longer)
- The ability to cross reference to permit, contract, and POTW monitoring files, if applicable.

This procedure is described in Section 5.4.

2. Compliance Sampling and Analysis

The submission must document and describe the POTW's procedures for sampling and analyzing the effluents of its industrial users. Three basic types of compliance sampling and analysis are commonly considered:

- Scheduled monitoring (sampling and analysis on a fixed schedule)
- Random monitoring (sampling and analysis—scheduled or unscheduled—that is unannounced or performed with short notice)
- Demand monitoring (sampling and analysis triggered by an event such as a public complaint or an observed POTW operating problem)

Monitoring and inspection activities are outlined for Rapid City in Section 5.5.

TABLE 3.

Program Implementation Procedures Checklist

	Yes	No	Section of POTW's Submission
I. **Updating the Industrial Waste Survey** [403.8(f)(2)(i) and (ii)]			
A. Are procedures identified for updating (periodically) the waste survey information for existing users?	___	___	________
B. Do procedures require new industries to supply discharge information or otherwise ensure that it will be collected?	___	___	________
II. **Notification of Appropriate Federal, State, and/or Local Standards or Limitations** [403.8(f)(2)(iii)]			
A. Are there procedures for keeping abreast of existing and newly promulgated standards and requirements?	___	___	________
B. Does the POTW evaluate which users are subject to standards?	___	___	________
C. Is there a mechanism to identify and notify industrial users of standards, limitations, or other requirements?	___	___	________
III. **Receipt and Analysis of Self-Monitoring Reports and Other Notices** [403.8(f)(2)(iv)]			
A. Are there procedures for determining what self-monitoring and other reports are due?	___	___	________
B. Are values reported by industries compared to discharge standards or compliance schedules?	___	___	________
C. Are problems referred to appropriate authorities for technical evaluation and follow up?	___	___	________
IV. **POTW Compliance Sampling and Analysis** [403.8(f)(2)(v)]			
A. Does the description of the monitoring program include procedures for periodic random sampling of significant industrial discharges?	___	___	________
B. Are sampling and monitoring parameters identified for each firm or group of industries?	___	___	________
C. Is the POTW sampling for the significant pollutants identified by the Industrial Waste Survey or by the priority pollutant/industry matrix? (Appendix B)	___	___	________
D. Do the sampling and monitoring procedures conform to EPA requirements? (40 CFR 136,"Standard Methods")	___	___	________
E. Is the frequency adequate to determine compliance independent of information supplied by I.U.s (at least annual)?	___	___	________

TABLE 3.

Program Implementation Procedures Checklist (Continued)

	Yes	No	Section of POTW's Submission
F. Has the POTW addressed:			
- Safety considerations?	___	___	___
- Quality control techniques?	___	___	___
V. Noncompliance Investigations and Enforcement [403.8(f)(2))vi)]			
A. Are follow-up actions to investigate non-compliance documented?	___	___	___
B. Do these activities include provisions to:			
- Cover emergency situations?	___	___	___
- Notify industrial users of violations?	___	___	___
- Allow for response by industrial users?	___	___	___
- Abate and control problem discharges?	___	___	___
- Verify that corrective actions have worked?	___	___	___
- Obtain compliance through legal means if necessary?	___	___	___
- Assess penalties for noncompliance?	___	___	___
C. Are procedures for quick response sampling and analysis included (demand sampling)?	___	___	___
D. Are chain-of-custody and quality control provisions specified?	___	___	___
VI. Public Participation [403.8(f)(2)(vii)]			
A. Do procedures include at least annual notice of violations published in local newspapers?	___	___	___
B. Is notice and opportunity to respond provided, both to the industrial users and the general public, on the process of developing local industrial effluent limitations?	___	___	___
C. Are program records available to the public?	___	___	___
VII. Multijurisdictional Submissions	___	___	___
A. Are there procedures for coordinating monitoring, enforcement, and implementation activities between the jurisdictions involved?	___	___	___
B. Has the NPDES permit holder assumed lead responsibility in program implementation?	___	___	___

ORGANIZATION, STAFFING, EQUIPMENT, AND FUNDING

The ability to develop and implement a successful pretreatment program depends upon a number of factors. The importance of legal authority, sound technical information, and proper procedures has already been discussed. This subsection examines the need for resources and an organization to apply them efficiently and effectively. An acceptable submission will demonstrate that the POTW has:

- A workable organization to integrate elements of the program
- An adequately sized and trained staff to carry out program requirements
- The necessary equipment to fulfill monitoring and other program needs
- Adequate funds to support the proposed program.

40 CFR 403.8(f)(3) requires that the POTW have "sufficient" resources and qualified personnel to implement the authorities and procedures called for in the program. Although the regulations do not define what is meant by "sufficient," they do require that the POTW submit certain items:

- A brief description (including organization charts) of the POTW organization which will administer the program
- A description of funding levels and full- and part-time manpower available to implement the program.

If more than one agency is responsible for administering the program, each agency must be identified. The responsibilities of each participating agency must also be delineated and procedures for coordination described.

Section 6 identifies the personnel and equipment Rapid City will use in its program. Chapter 6.2 presents an estimate of program costs and identifies from where the funds to pay for these costs will come. As in the other sections, Table 5 is a checklist for Program Resources.

Organization and Staffing

Organization and staffing requirements will vary according to the complexity and comprehensiveness of the local program. Whether the staff is large or small, it must be organized in a way that facilitates the successful completion of program responsibilities. The adequacy of the program's organization and staffing is not only based on whether essential functions are covered, but also on whether the number and type of staff are appropriate to implement the requirements of the program. The following elements should be evident in the submission:

- Clear and appropriate lines of authority
- Identification of staff responsibilities
- Qualifications of staff
- Staffing levels related to required work effort
- A mechanism for interrelationships with other departments
- Contract management (if required).

Funding

The program submission must contain an itemization of program costs. The submission should contain either projected costs for the first year of program operation or the actual costs for the most recent operating year if the pretreatment program was fully implemented in that year. Costs should be itemized in the following areas:

- Labor (salaries, benefits)
- Annualized capital costs
- Operating and maintenance costs (travel, supplies, etc.)
- Overhead (rent, phones, etc.)
- Debt service and/or other applicable costs.

In addition, the submission must provide an account of the revenue sources to be used to cover the annual costs of the pretreatment program. This account may be descriptive, or may be an itemization of each revenue source and amount. A system for continuous revenue generation (e.g., user charges) might be discussed as well.

Implementation Costs

A POTW program submission should provide an estimate of the annual cost of implementing its pretreatment program. The two types of costs involved are capital costs and operating costs. The capital cost of purchasing equipment represents a single cash outlay, while labor, O&M, and the other items represent operating expenses that must be recovered yearly. Equipment may be purchased directly out of the POTW's budget if sufficient reserve cash is available; it may also be financed or leased and then repaid annually as an ongoing cost in the operating budget.

1. Capital Costs

A major financial decision for a POTW implementing a program involves the procurement of sampling and analysis equipment. A POTW has the choice of purchasing equipment, leasing equipment, contracting services, or any combination of these. Depending on the level of monitoring required for the program, a POTW should determine which of these options is the most cost-effective. It may be most feasible for small to medium-sized plants to buy equipment for sampling and conventional pollutant analyses, while using a commercial lab for metals and organics analyses. Larger POTWs, conducting more toxics analyses, may choose to buy equipment for full in-house capability. Since sampling/analysis equipment can be expensive to purchase and maintain, the POTW should determine what the impact of these costs would be on sewer and monitoring charges to industries and whether purchase is warranted.

2. Operating Costs

Annual operating costs will generally be based on the level of effort estimated for conducting various tasks within the program. While the majority of operating costs may be attributed to labor, other significant costs may result from equipment O&M, overhead, and debt repayment. For simplicity, some POTWs estimate labor hours for each program task and then convert these to total cost by multiplying by a gross factor that represents overhead and other costs. Table 4 lists program tasks and various factors affecting the level of effort for each. By combining labor costs with other direct and indirect costs, the total annual budget for the program can be calculated.

Financing Sources and Cost Recovery Systems

After the program costs are estimated, the submission should present the means for recovering these costs. Major capital expenditures, such as equipment purchase, may be financed via municipal bonds or with surplus capital improvement revenues, if available. Annual operating costs can be recovered through continuous revenue sources from fees, charges, or interest. Ideally, program revenues should be generated from the industries serviced by the program in proportion to their relative use.

A cost allocation scheme should be developed to recover pretreatment costs from various groups or classes of users according to some basis such as monitoring emphasis. The POTW should choose an allocation basis that is justifiable and equitable when applying pretreatment charges to IUs. There are many types of charges or fees that may be used to generate revenues from IUs. The most appropriate types for a pretreatment program include: a service or monitoring charge, an industry surcharge, and a pollutant strength surcharge.

TABLE 4.

Factors Affecting POTW Levels of Effort for Pretreatment Program Operating Tasks

Sampling/Industrial Review	Number of Industrial Users Frequency of Sampling
Lab Analysis	Number of Samples Requiring Analysis Type of Analysis Required Pollutants Analyzed (i.e., toxics, conventional metals, etc.)
Technical Assistance	Treatment Plant Capabilities Inclusion of New Industrial Users Number of Industrial Users POTW Influent and Effluent Characteristics
Legal Assistance	Number and Seriousness of Violations Availability of In-house Counsel Burden of Proof Created by Ordinance
Financial/ Administrative	Number of Industrial Users Number of Samples per Year Size of Service Area

TABLE 5.

Resources Checklist

	Yes	No	Section of POTW's Submission
I. Organization and Staffing [403.8(f)(3) and 403.9(b)(3)]			
A. Is the description of the POTW organization clear and appropriate?	___	___	___
B. Are mechanisms identified for delegating pretreatment tasks to other local government agencies?	___	___	___
C. Are personnel or positions identified that are responsible for:			
• Technical review?	___	___	___
• Monitoring?	___	___	___
• Laboratory analysis?	___	___	___
• Legal assistance and enforcement?	___	___	___
• Administration?	___	___	___
D. Are job descriptions and qualifications adequately identified?	___	___	___
E. Have appropriate staffing levels been determined based on identified needs?	___	___	___
II. Equipment			
A. Does the POTW have adequate sampling and analysis capabilities to monitor for these types of pollutants:			
• Conventionals?	___	___	___
• Nutrients and other non-conventionals?	___	___	___
• Metals?	___	___	___
• Toxic organics?	___	___	___
B. If not, are other arrangements made to do so (e.g., contract with private lab, other agency)?	___	___	___
III. Funding Estimates and Sources			
A. Has the POTW demonstrated that it can provide sufficient funds to meet the costs of operating its pretreatment program?	___	___	___
B. Does the POTW present a reasonable estimation of pretreatment implementation costs?	___	___	___
C. Is there any justification or explanation of costs or cost estimates?	___	___	___
D. Is there an account of the revenue sources to be used to cover the annual costs of the pretreatment program?	___	___	___

TABLE 5.

Resources Checklist (Continued)

	Yes	No	Section of POTW's Submission
IV. **Multijurisdictional Submissions**			
A. Is each jurisdiction participating in funding the pretreatment program?	___	___	__________
B. Are the relationships between the staff [personnel] of the participating jurisdictions adequately described and documented?	___	___	__________

SECTION I

INTRODUCTION

The General Pretreatment Regulations as promulgated by the U.S Environmental Protection Agency on January 28, 1981 (40 CFR 403) require that the Rapid City Wastewater Department develop and implement a pretreatment program. The objectives of the National Pretreatment Program are: 1) to prevent the introduction of pollutants into publicly owned treatment works (POTWs) that interfere with the operation of the facility, including the use or disposal of municipal sludge, 2) prevent the introduction of pollutants into POTWs that pass through or are otherwise incompatible with the treatment works, and 3) to improve opportunitites to recycle and reclaim municipal wastewaters and sludges.

To meet these National objectives, the Rapid City program was developed in accordance with the pretreatment program requirements in §403.8 and with the program submission requirements in §403.9. Integral to these requirements are the National Pretreatment Standards for prohibited discharges (§403.5) and categorical industries (§403.6). The prohibited standards provide specific prohibitions of nondomestic pollutants that shall not be discharged into the POTW for the purpose of preventing pass through and interference. The Standards for categorical industries present limitations for specific pollutants which may be discharged into POTWs by industrial users in individual subcategories. Since Rapid City has identified no industrial users subject to the current Categorical Standards, the program's development and operation is primarily based on the National Prohibited Discharge Standards.

Program Summary

Under Rapid City's National Pollutant Discharge Elimination System (NPDES) permit, the City is required to develop and submit to EPA Region VIII for approval a pretreatment program by July 31, 1982. The requirement is predicated upon Rapid City's POTW having a design flow greater then 5 million gallons per day and several significant industrial dischargers in the system. The development of the program is divided into five tasks:

- Evaluation of the POTW operating characteristics and problems
- Identification of industrial users and characterization of their wastewater discharges
- Design and adoption of the legal authority necessary to implement and enforce the program
- Development of procedures to ensure compliance with the requirements of the program
- Demonstration of sufficient personnel, equipment, and funding to carry out the program.

As discussed in Section 2 of this report, an evaluation of operating conditions of the Rapid City POTW was conducted to determine the extent that industrial discharges were influencing the facility and to identify the potential for related problems. Currently, the Rapid City POTW is meeting the requirements of its NDPES permit. An analysis of the plant's wastewater influent and sludge demonstrates that metal concentrations are relatively low and that land application of sludge is not causing abnormal accumulation of metals in the soils or crops.

The industrial users of the Rapid City POTW have been identified and classified according to relative importance to the pretreatment program.

Selected industrial discharges were sampled and analyzed and their wastewater characteristics were used as criteria for classification. As described in Section 3 of this report, a large portion of the industrial flow to the system is generated from several dairies, meat packers, and other food processors which discharge high strength conventional wastes. There are two industries which discharge nonconventional pollutants, such as heavy metals, and which will be subject to the pretreatment program.

Section 4 provides the legal authority to implement and enforce the requirements of the pretreatment program. Rapid City has adopted an ordinance that addresses Prohibited Discharges and Categorical Standards. Specific effluent limitations for various toxic and other nondomestic pollutants are imposed in the ordinance. Industrial users in outlying jurisdictions are required to comply with Rapid City's pretreatment program through the adoption of specific pretreatment provisions in their district's Sewer Service Agreement. Additionally, an industrial waste permit including an application form and a conditions statement has been developed for use by all significant industrial users.

Section 5 of the report presents the administrative and operating procedures to be used by Rapid City in ensuring compliance with pretreatment program requirements. The process for permitting new and existing industrial users of the POTW, including those in outlying districts, is outlined. Rapid City has developed procedures to notify all industrial users of the facility to make sure they are informed of program requirements. Procedures have also been developed to require industry self-monitoring and evaluate all information submitted. Rapid City will conduct monitoring and inspection activities according to a routine schedule and will carry out enforcement proceedings as necessary to assure compliance with program standards and requirements.

Section 6 demonstrates that sufficient personnel, equipment and funding are available to conduct all aspects of the pretreatment program. Since Rapid City is already involved with monitoring and inspecting a large portion of the industrial users of the POTW, additional efforts required for this program are not expected to be substantial.

Each of these above elements is discussed in the following sections of this program submission.

SECTION 2

RAPID CITY'S POTW

2.1 BACKGROUND

The Rapid City sewer system services a population of about 50,000 people with about 13,000 connections. The treatment plant has a design capacity of 13.5 million gallons per day (mgd); however, the average wastewater flow to the plant is currently about 7.5 mgd. The industrial flow to the plant makes up between 8-10% of the total flow.

The Rapid City POTW uses a single-stage, high rate trickling filter process designed to treat an average flow of 13.5 mgd. The plant began operation in 1967. The liquid processing train consists of bar screens, pre-aeration, primary clarifiers, two trickling filters, and final clarifiers. Treated effluent is discharged into Rapid Creek under EPA permit no. SD-0023574. Figure 2.1 is a flow schematic of the POTW.

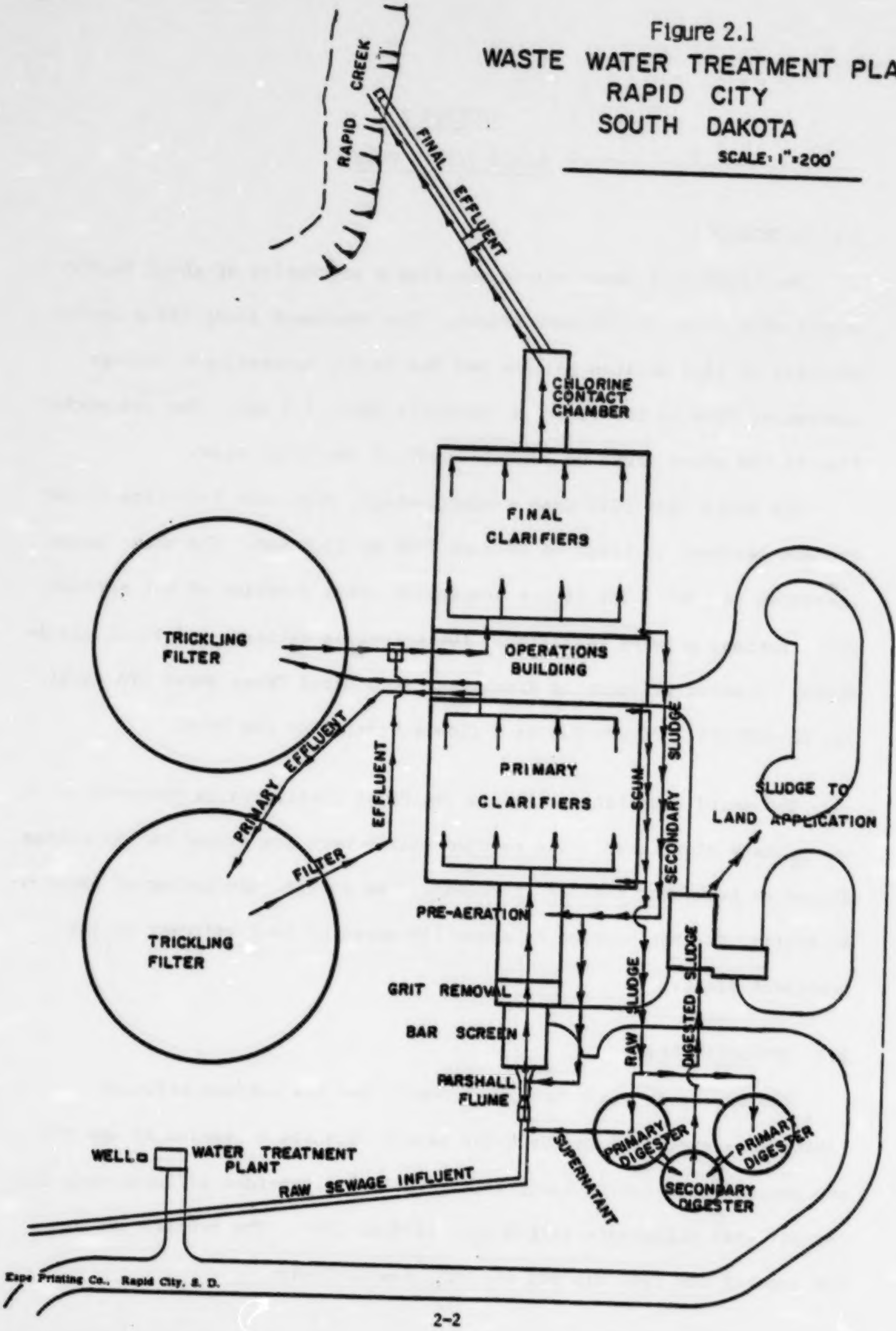
The solid material settled in the final clarifiers is returned to the primary clarifiers. The settled solids here are pumped to the sludge digestion tanks for further treatment. The sludge, consisting of about 3-4% solids, is then applied on about 140 acres of land adjacent to the treatment plant.

2.2 OPERATING DATA

The treatment plant has consistently met its current effluent limitations specified in its NPDES permit with the exception of one oil and grease violation in April 1981. Table 2.1 provides effluent data for conventional pollutants during July 1979 to 1981. The average BOD and TSS removal for 1980 was 87% and 83%, respectively.

Figure 2.1
WASTE WATER TREATMENT PLANT
RAPID CITY
SOUTH DAKOTA

SCALE: 1"=200'


RAPID CREEK
FINAL EFFLUENT
CHLORINE CONTACT CHAMBER
FINAL CLARIFIERS
TRICKLING FILTER
OPERATIONS BUILDING
PRIMARY EFFLUENT
EFFLUENT
PRIMARY CLARIFIERS
SCUM
SECONDARY SLUDGE
SLUDGE TO LAND APPLICATION
FILTER
TRICKLING FILTER
PRE-AERATION
GRIT REMOVAL
BAR SCREEN
RAW SLUDGE
DIGESTED SLUDGE
PARSHALL FLUME
WELL
WATER TREATMENT PLANT
SUPERNATANT
PRIMARY DIGESTER
PRIMARY DIGESTER
SECONDARY DIGESTER
RAW SEWAGE INFLUENT

Espe Printing Co., Rapid City, S. D.

TABLE 2.1

RAPID CITY EFFLUENT CHARACTERISTICS[a]

Month	Flow (mgd)	pH	BOD(mg/1)	TSS(mg/1)	O&G[b](mg/1)
Jul 79	8.5 (6.0-12.2)	7.2-7.5	22 (16-29)	30 (16-50)	6.7
Aug 79	8.2 (5.8-12.0)	7.5-7.9	27 (16-47)	33 (8-60)	5.3
Sep 79	7.5 (5.8-11.7)	7.6-8.0	22 (15-33)	31 (18-50)	8.3
Oct 79	7.1 (5.8-11.3)	7.5-8.0	22 (11-30)	36 (20-54)	9.0
Nov 79	7.1 (6.0-11.4)	7.7-8.0	26 (16-42)	30 (14-48)	9.7
Dec 79	6.8 (5.8-11.0)	7.6-8.0	27 (17-37)	32 (12-50)	9.1
Jan 80	6.9 (5.8-11.5)	7.6-8.0	30 (18-42)	39 (28-54)	9.9
Feb 80	7.4 (6.1-9.5)	7.4-8.0	26 (17-42)	39 (20-52)	9.6
Mar 80	7.9 (6.1-9.9)	7.5-7.8	21 (14-29)	27 (16-40)	8.6
Apr 80	8.5 (5.8-11.2)	7.3-7.7	26 (14-36)	30 (14-60)	8.9
May 80	11.4 (5.5-12.2)	7.2-7.8	26 (15-40)	39 (14-98)	7.8
Jun 80	8.9 (5.4-12.5)	7.2-7.7	20 (15-30)	29 (10-46)	7.5
Jul 80	8.5 (5.1-11.9)	7.2-8.0	24 (16-31)	28 (4-58)	2.8
Aug 80	7.9 (4.5-11.4)	7.2-7.6	24 (18-30)	29 (12-48)	5.3
Sep 80	7.5 (3.8-11.3)	7.3-7.6	21 (15-34)	26 (18-40)	7.4
Oct 80	7.6 (3.5-11.0)	7.4-7.6	20 (11-47)	24 (14-38)	9.4
Nov 80	7.2 (3.8-10.9)	7.4-7.9	23 (14-35)	24 (14-44)	8.4
Dec 80	7.2 (3.7-10.9)	7.2-7.6	22 (14-36)	29 (8-52)	1.1
Jan 81	6.8 (3.5-10.6)	7.3-7.7	24 (17-39)	30 (8-50)	5.7
Feb 81	6.8 (3.4-10.6)	7.2-7.5	27 (11-64)	23 (8-60)	9.5
Mar 81	7.3 (3.4-10.8)	7.2-7.6	20 (8-27)	34 (12-96)	9.4
Apr 81	7.0 (3.3-11.3)	7.2-7.5	25 (14-43)	30 (12-56)	12.3
May 81	8.0 (4.9-12.2)	7.2-7.5	22 (14-34)	37 (18-96)	5.5
Jun 81	8.3 (5.0-14.4)	6.9-7.5	18 (9-29)	34 (14-62)	8.7
Jul 81	7.0 (4.9-10.2)	7.0-7.5	19 (8-31)	32 (10-52)	6.9
Average- (25 mos)	7.7	7.3-7.7	23	31	7.7
Permit Conditions	n/a	6.0-9.0	30 (mo av) 45 (wk av)	50 (mo av) 75 (wk av)	10 10

n/a Not applicable

[a] Monthly average data; range of daily concentrations shown in parentheses
[b] One sample per month

Effective July 1, 1983, the plant's NPDES permit will require 30 mg/l monthly average for TSS. Since the existing plant will not be able to meet this limitation, a facilities plan is currently being conducted to determine the additional treatment necessary to do so. The inability to meet this standard has not been linked to the discharges of any one or combination of industrial discharges.

POTW influent samples were also analyzed for metals to determine concentration levels. The results of three sampling efforts over the last five years are shown in Table 2.2. The 1982 data are assumed to be the most representative since the 1981 data were derived using a flame atomic adsorption instrument which does not have the sensitivity of the flameless instrument used in the 1982 analyses. Using the most recent data and comparing it to metal concentrations of other POTW influents, it appears that the influent concentrations of Rapid City are not significant. Table 2.3 provides data collected in two EPA studies showing metal concentrations for cities with little or no industrial contributions [column (1) and (2)] and with a range of industrial contributors [column (3)]. Rapid City's influent is comparable to (and in most cases significantly less than) the lower metal concentrations presented in the table. As part of an on-going monitoring program at the POTW, the Wastewater Department will sample the plant's influent and effluent for metals at least twice a year. This is intended to establish a more accurate representation of the general wastewater characteristics and to spot-check for modifications in industrial discharges.

TABLE 2.2

METAL CONCENTRATIONS IN RAPID CITY WASTEWATER INFLUENT[1]

	1977	1981	1982
Cadmium	1	<5	1
Chromium	20	<500	23
Copper	--	<100	8
Iron	1200	--	--
Lead	61	<100	8
Silver	29	<100	1
Zinc	--	<100	15
Mercury	--	<5	<1
Nickel	--	<100	19

[1] All concentrations in ug/l

TABLE 2.3

AVERAGE CONCENTRATIONS OF METALS IN TYPICAL POTW INFLUENTS[1]

Pollutant	(1) 40 POTW Study Avg. 2 Plants with Low Industrial Flow	(2) EPA 4 City Study Avg. Residential and Commercial	(3) 40 POTW Study Avg All Plants
Cadmium	4	1	39
Chromium	63	37	175
Copper	62	59	225
Cyanide	80	1	574
Lead	34	43	99
Nickel	34	8	119
Silver	6	3	9
Zinc	219	130	718

[1] All units are ug/l

2.3 OPERATING PROBLEMS

Over the last fifteen years, the wastewater treatment plant has experienced few operational problems or upsets that could be attributed to industrial contributors. In the past, a few incidents of slug loads discharged by industries have occurred. In one case in the mid-1970's, a metal plater dumped a chromium bath into the system, upsetting the sludge digestors. Since this incident occurred, the plater has closed operations. About once a year, the treatment plant experiences a slug load of spoiled milk from a milk producer. The plant has identified the industry and directed it to notify the plant when slug discharges occur. This notification has worked over the last few years and if a discharge occurs, the plant can adjust their operations to handle the excess organic loading. Violations in the treatment plant's NPDES permit have not occurred because of this loading problem.

Other areas concerning the facility are oil, grease, and grit discharges from the many restaurants, service stations and car washes in Rapid City. Interceptors are installed at most establishments, and regular attention is given to assuring that these are cleaned by the owners. In addition, the treatment plant effluent has occasionally violated its permit limitations for oil and grease. Because of this, the above-mentioned establishments will be included in the pretreatment program.

2.4 SLUDGE MANAGEMENT

The Rapid City wastewater treatment plant generates on the average 18,500 gpd of sludge from the digestors at about 2.5% solids content. This equals about 720 tons per year dry weight (654.5 metric tons). The plant superintendent estimates that about 20% of this sludge is given to local farms. The remainder (523.6 metric tons) is applied to 140 acres of land adjacent to the treatment plant. Crops are grown on this property by local farmers and used for cattle fodder.

The concentrations of various metals in the POTW sludge are presented in Table 2.4. Analyses were conducted on four separate occasions between 1976 and 1982. Comparing this data to typical sludge compositions (see Table 2.5) shows that Rapid City's sludge concentrations are much lower than the average concentrations presented and in some cases lower than the minimum values. Average concentrations of the four sludge analyses were calculated to estimate the cumulative amounts of metals applied to 140 acres (56.6 hectares) of cropland over the last 10 years. A layout of the 140 acres (or 56.6 hectares) of sludge-applied land and the years of application are shown in Figure 2.2. Using these data, the application amounts for the three plots of land were calculated and are presented in Table 2.4. These amounts were compared to the maximum amounts allowable as suggested by EPA[1] (see Table 2.6) and were determined to be sufficiently

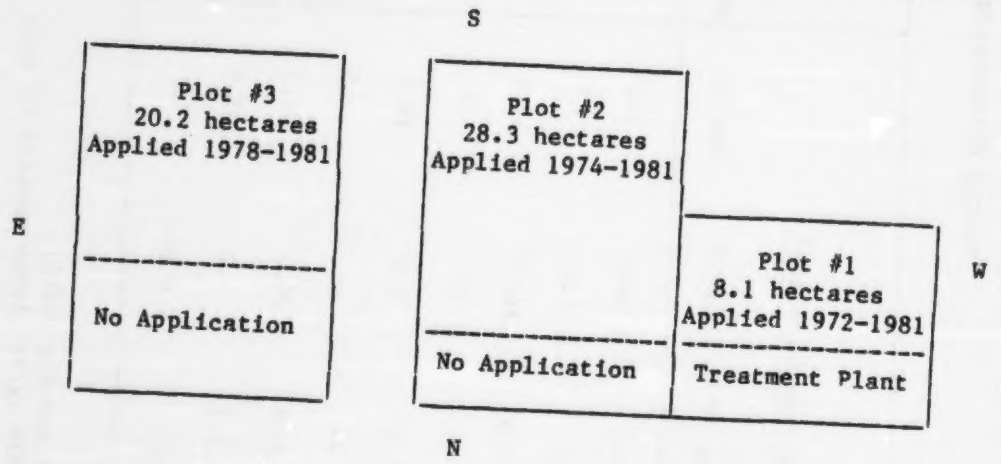

S
Plot #3
20.2 hectares
Applied 1978-1981
No Application
Plot #2
28.3 hectares
Applied 1974-1981
No Application
Plot #1
8.1 hectares
Applied 1972-1981
Treatment Plant
E
W
N

FIGURE 2.2 PLOTS OF LAND USED FOR SLUDGE APPLICATION

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[1] *Sludge Treatment and Disposal,* EPA Technology Transfer, EPA-625/4-78-012, October 1978.

TABLE 2.4

SLUDGE CHARACTERISTICS AND APPLICATION TO LAND

	Sludge Concentration[1]					Land Application			
						Generation Rate[2]	Cumulative Application Amounts (kg/ha)[3]		
	Fall 76	Aug 77	Dec 79	Jan 82	Average		Plot 1	Plot 2	Plot 3
Cadmium	0.11	0.5	0.2	1.0	0.4	0.21	0.09	0.03	0.01
Chromium	1.79	--	1.6	3.5	2.3	1.20	0.51	0.22	0.08
Copper	44.0	19.0	16.0	31.8	27.7	14.50	6.10	2.62	1.03
Iron	527.0	--	--	--	527.0	276.0	118.0	49.8	19.5
Lead	9.82	14.0	1.6	16.1	10.4	5.44	2.33	0.98	0.38
Silver	2.22	--	--	1.5	1.8	0.94	0.40	0.17	0.07
Zinc	52.6	18.0	20.0	51.5	35.5	18.59	7.95	3.36	1.31
Nickel	--	1.7	0.8	5.0	2.5	1.31	0.56	0.24	0.09
Mercury	--	--	0.004	--	0.004	0.002	--	--	--

[1] All concentrations in ppm dry weight
[2] kg/yr; based on 523,636 kg/yr sludge applied to land
[3] lb/acre = 1.121 kg/hectare

TABLE 2.5

CHEMICAL COMPOSITION OF SEWAGE SLUDGES [a,b]

Component Units	Number of Samples	Range	Median	Mean
Cu	205	84-10,400	850	1210
Zn	208	101-27,800	1740	2790
Ni	165	2-3,520	82	320
Pb	189	13-19,700	500	1360
Cd	189	3-3,410	16	110

[a] Data are from numerous types of sludges (anaerobic, aerobic, activated, lagoon, etc.) in seven states: Wisconsin, Michigan, New Hampshire, New Jersey, Illinois, Minnesota, Ohio

[b] Dry weight basis (mg/kg)

TABLE 2.6

MAXIMUM AMOUNT OF METAL[a] SUGGESTED FOR AGRICULTURAL SOILS TREATED WITH SEWAGE SLUDGE

Metal	Soil cation exchange capacity (meq/100 g)		
	<5	5 to 15	>15
Pb	500	1,000	2,000
Zn	250	500	1,000
Cu	125	250	500
Ni	50	100	200
Cd	5	10	20

[a] Dry weight basis (kg/ha).

low to continue land application. The cation exchange capacity of the amended soils range from 19.1 to 26.7 meg/100 g soil, making the higher range limits of Table 2.6 applicable.

The soils and crops at the wastewater treatment plant were tested for various metals and other pollutants. The results are shown in Tables 2.7 and 2.8. Comparing this data to common metal concentrations[1] see Table 2.9) suggests that some metals, such as copper and cadmium, may be a little high in the soils and/or plant tissues.

Samples of the sludge crops and soils will be further analyzed at least on a yearly basis to determine whether a need exists to modify application rates on this property in the future. The Wastewater Department is planning to purchase a sludge injector machine and then apply to lands owned by local farmers. When this occurs, it is anticipated that all sludge generated will be applied off-site.

---

[1] Sludge Treatment and Disposal, EPA Technology Transfer, EPA-625/4-78-012, October 1978.

TABLE 2.7

POLLUTANT CONCENTRATIONS IN SOILS FOR RAPID CITY[a]

	Plot		
	1	2	3
Copper	61	42.1	2.0
Iron	13	14	8
Zinc	31.8	45.8	1
Manganese	28	68	3
Nitrates (NO_3)	118	117	58
Phosphorus (P_2)	204	224	125

[a] All concentrations in ppm dry weight

TABLE 2.8

POLLUTANT CONCENTRATIONS[a] IN CROPS GROWN ON SLUDGE-AMENDED SOIL FOR RAPID CITY

	Alfalfa[b]	Corn
Cadmium	0.27	1.2
Copper	9.4	8.5
Iron	91.2	--
Lead	0.26	0.7
Manganese	56.5	52.0
Zinc	39.1	2.2
Chromium		1.5
Nickel		

[a] All concentrations in ppm

[b] Dry weight. Data represents a mixture of about 33% alfalfa grown on sludge-amended land and 67% alfalfa grown on other land without sludge application.

TABLE 2.9

METAL CONTENT OF COMMON SOILS AND CROPS

Element	Conc. in soils		Conc in plant diagnostic tissue	
	Common (mg/kg)	Range (mg/kg)	Normal (mg/kg)	Toxic[a] (mg/kg)
Cd	0.06	0.01-7	0.2-0.8	—
Cr	100	5-3,000	0.2-1.0	—
Cu	20	2-100	4-15	>20
Pb	10	2-200	0.1-10	—
Mn	850	100-4,000	15-100	--
Ni	40	10-1,000	1	>50
Zn	50	10-300	150-200	>200

[a] Toxicities listed do not apply to certain accumulator plant species

SECTION 3

INDUSTRIAL WASTE SURVEY

3.1 BACKGROUND

The Rapid City POTW has conducted an Industrial Waste Survey (IWS) to identify those industrial users (IUs) that might be subject to the Pretreatment Program and to characterize the IUs wastewater discharges. The survey identified those IUs that have the potential to violate the Federal Prohibited Discharge Standards (40 CFR 403.5), the specific limitations set by the Rapid City Code, and those IUs which are subject to Federal Categorical Pretreatment Standards. The IWS provides Rapid City with the background information necessary to issue discharge permits, to design the monitoring enforcement program, and to evaluate the suitability of the effluent limitations in the Rapid City Code.

The specific limitations set by the Rapid City Code (Sec. 30-163) are presented in Table 3.1. As interpreted by the Code, these limits are applied to discharges as they enter the public sewer. These discharges generally consist of combined process and sanitary waste flows. On the other hand, Categorical Pretreatment Standards are technology based limits that apply directly to the regulated process stream. Rapid City has one industrial user subject to the current Electroplating Category Pretreatment Standards for existing sources (i.e., Magnetic Peripherals, see Section 3.3). The applicable standards are found under Subpart H - Printed Circuit Board Subcategory §413.80 and are shown in Table 3.2. The date for compliance is currently January 28, 1984. Therefore, this one industrial user must exhibit compliance to both the specific limitations in the Code and the Federal Categorical Standards.

TABLE 3.1

SPECIFIC LIMITATIONS CONTAINED IN THE RAPID CITY ORDINANCE

POLLUTANT	CONCENTRATION (mg/l)	POLLUTANT	CONCENTRATION (mg/l)
Copper	0.5	Lead	0.1
Zinc	0.5	Boron	1.0
Chromium (Hexavalent)	2.0	Cadmium	0.02
Chromium (Trivalent)	2.0	Silver	0.03
Total Chromium	5.0	pH	5.5-9.5
Nickel	0.5	Oil & Grease	100 mg/l

TABLE 3.2

PRETREATMENT STANDARDS FOR PRINTED CIRCUIT BOARD FACILITIES DISCHARGING 10,000 GALLONS OR MORE PER DAY

Pollutant	Maximum for any one day	Average of daily values for 4 consecutive monitoring days shall not exceed
CN, T	1.9	1.0
Cu	4.5	2.7
Ni	4.1	2.6
Cr	7.0	4.0
Zn	4.2	2.6
Pb	0.6	0.4
Cd	1.2	0.7
Total metals.......	10.5	6.8

To assist in the development and the administration of the program, the IWS sought to classify industrial users as significant IUs, minor IUs, and insignificant IUs. The following definitions are used in the program for these classes of users:

> Class I - Significant Industrial User As defined in the Rapid City Code, any user of the City's wastewater disposal system who (i) is subject to Federal Categorical Standards, (ii) has in its wastes toxic pollutants as defined by Section 307 of the Clean Water Act, or (iii) is found by the City, State, or EPA to have significant impact, either singly or in combination with other contributing industries, on the wastewater collection or treatment system, the quality of sludge, the system's effluent quality, or air emissions generated by the system.
>
> Class II - Minor Industrial User These are industrial users that discharge nondomestic pollutants to the public sewer in amounts that, on a routine basis, have insignificant impact on the treatment works but, may nonetheless, present the potential to impact the collection or treatment system or to violate the prohibited discharge limitations in the Rapid City Ordinance. This includes those industries that present the potential to cause sewer obstruction, slug loads, or chemical spills.
>
> Class III - Insignificant Industrial Users These industrial users include those, for example, that have dry processes, discharge only sanitary wastes, or are considered to have an insignificant impact on the wastewater disposal system.

The classification of industrial users will assist Rapid City in structuring and assigning priority to the pretreatment program procedures. The Class I industries will receive the emphasis of the program's administration, inspection and monitoring. These IUs have the greatest potential to obstruct, pass-through or otherwise interfere with the treatment plant operations because of their flow volume and wastewater characteristics.

The Class II industries, although larger in number than the Class I, will receive less attention per industry but are included in the program because they present the potential to impact the collection/treatment system. Several of these industries have small batch processes with little, if any, waste discharged, but have a potential for toxic spills. Other Class II industries discharge conventional pollutants that may occur as slug loads.

The Class III industries are dry process industries or dischargers of primarily sanitary wastes and therefore are considered insignificant to the pretreatment program. However, any of these industries may be reclassified and included in the program if a problem is identified, or the nature of their operation should change.

3.2 IDENTIFY AND LOCATE INDUSTRIAL USERS (IUs)

A screening process was used by Rapid City in identifying and characterizing the industrial users of the POTW. Rapid City first sought to compile a comprehensive list of all commercial establishments in the city. Initially, Dun and Bradstreet listings and city water records were used. Approximately 1160 establishments were examined in the water records, documenting potential industrial users and water usage rates. Industries within any of the 34 categories listed in the Federal Pretreatment Regulations were especially sought. Questionnaires were sent to 52 establishments including meat packing, milk processing, timber products, laundries, printing, mechanical products, electronics, and others. A sample questionnaire is shown in Appendix A. Approximately 37 industries initially returned the questionnaires, and after follow-up phone calls and site visits, all were returned. In addition, the Wastewater Department currently operates an inspection program for restaurants, service stations, and car washes and has identified 116 of these. Because of oil, grease and grit problems experienced in the past, Rapid City has decided to include these establishments in the pretreatment program.

The survey also covered three sanitary districts served by the Rapid City wastewater system. In the Rapid Valley District, one industrial user was identified and a questionnaire was filled out. Further industrial growth in this area is anticipated. The other two districts are residential in nature and contain no potential dischargers of nondomestic or industrial wastes.

Based on the information collected in the questionnaire survey, many of the industries were considered insignificant (Class III) because of dry processes or sanitary waste discharges. The industries that were screened from the program at this stage are shown in Table 3.3. As these industries were excluded from the program, other industries with large flow volume and the potential for toxic or problem waste loading were targeted for follow up and field monitoring as discussed in the next section.

3.3 WASTE CHARACTERIZATION

The Wastewater Department sought to identify the pollutants in various industrial discharges to further classify those potentially significant industrial users. Based on site investigation and/or flow data of all these industries, the sampling program was narrowed to 8-10 industries. Only two of these industries were suspected of discharging toxic pollutants, the other industries were either meat packers or dairies having large flow and waste loading characteristics. The sampling and analysis results provided a basis for classifying the "significant" and "minor" industrial users. The results for those industries classified as "significant" or Class I are shown in Table 3.4. Information for the "minor" or Class II industries was then compiled and is shown in Table 3.5. Wastewater analysis was conducted for some of the larger Class II industries such as Gillette Dairy, Western Meats and Hubbard

TABLE 3.3

INDUSTRIAL USERS EXCLUDED FROM PRETREATMENT PROGRAM - CLASS III

COMPANY	SIC	PRINCIPAL ACTIVITY
Baken Park Laundry & Dry Cleaners	7215	Washing & dry cleaning clothes
Benson Optical Co.	3851	Manufacture of eyeglasses
Black Hills Chemical Company	2869	Distribution of commercial chemicals
Black Hills Power & Light	4911	Electric generating plant
Black Hills Printing	2741	Job printing
Cabinet Shop, The	2434	Manufacture of cabinets
Dakota Supply Company	3944	Distribution of craft supplies
Dales Tire & Retreading	3009	Tire retreading
E & J Specialties	3079 2555	Manufacture of plastic badges
FTC Laundry	7215	Coin operated laundry
Imperial Signs	3993 3799	Manufacture of signs and trailers
M. G. Oil Company	2911	Distribution of petroleum products
Mr. Nifty Cleaners	7216	Dry cleaning
Masters Awards	2262 3479 3499	Fabricating & engraving of metal products, fabric embroidery
North Central Supply	3442	Distribution
Parkway Car Wash	7542	Car wash
Printing Inc.	2732	Commercial printing & publishing
Robbinsdale Cleaner & Shirt Laundry	7215	Dry cleaning and laundry
Rapid Crystal Ice Co.	2097	Ice manufacture
Rapid Rent-All	7542	Equipment rentals
Stamper Black Hills Gold Jewelry Mfg.	3911	Manufacture of jewelry
Sycom Inc.	3613	Manufacture of electronic components
Sterns Roger Inc.	3312	Cool gasification pilot plant (closed)
Vinyl Sash Windows & Glass	3832	Sale of home improvement products
Whittaker and Mattsen, Inc.	3444	Sheet metal fabrication

Table 3.4 Class I Industries and Wastewater Characteristics

Parameters	Magnetic Peripherals, Inc.[1]	Servall Towel & Linen Supply[2]
SIC	3471 - 3479	7211
Principal Activity	Assembly of computer circuit boards	Commercial laundry
Wastewater Flow (gpd):		
Total	56,800	
Sanitary	29,300	25,000
Process	12,200	1,000
Cooling/Boiler	15,300	
pH	93	24,000
Temperature (F°)	80	7.1
		70
Copper (ppm)	0.4	
Lead	0.8	0.5
Zinc	0.5	1.5
Cadmium	< 0.03	1.0
Chromium	0.5	< 0.1
Arsenic	0.02	< 0.5
Nickel	0.42	< 0.02
Cyanide	0.2	-
Phenol	—	-
Oil & Grease	—	0.013
		534

[1] Analysis taken of the process stream only; data represents average of two samples.

[2] Wastewater data is preliminary since sample was taken upstream from solids interceptor.

Industry	SIC	Principal Activity	Sanitary	Process	Cooling Boiler	BOD	TSS	pH	Temp(F°)
Black Hills Milk Products	5143	Mfg. butter & dry milk	1.5	48.4	-	470	154	7.5	67
Black Hills Packing Co.	2077	Cattle Slaughter & Meat Processing	6.0	267.5	-	569	316	7.2	82
Brown Swiss Milk Co.	5143	Process Milk & Cottage Cheese	0.5	32.3	-	4,770	568	5.7	65

NOTE: Flow data in 10^3gpd and pollutant concentrations in ppm.

Table 3.5. Class II Industries

Industry	SIC	Principal Activity	Sanitary	Process	Cooling/ Boiler	Remarks
Gillette Dairy	5193	Milk processing	500	22,800	-	Normally process 3 days/wk.
Hubbard Milling	2041	Flour milling Cattle feed manufacturing	500	4,800	1,200	BOD=2,400 mg/l TSS=2,165 mg/l
Metz Baking	2051	Baking bread products	1,900	21,400	2,280	
RC Western Meats	2077	Meat Butchering & processing	300	14,000	-	BOD=724 mg/l TSS=360 mg/l
Black Hills Gold Creations	3911	Mfg of Gold jewelry	2,500	2,600	-	Spill potential
Rapid Film Service		Film processing & printing	300	8,200	-	Silver Recovery
1 Rapid City Journal	2711	Daily Newspaper	2,650	500	-	Silver Recovery
Ramco Corp[1]	3079	Mfg of acrylic bathtubs	400	600	-	Spill potential
Tepco, Inc	3662	Mfg of electronic circuit boards & components	75	75	-	Spill potential

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[1] Located in the Rapid Valley Sanitary District

Milling. The 116 restaurants, service stations, and car washes have also been included in Class II industries and under the monitoring program. These establishments are listed in Appendix B.

The Class I or significant industrial users received the greatest attention of all industries in the pretreatment program development. Each of these IUs, their processes and wastes are discussed below.

- Magnetic Peripherals, Inc. Magnetic Peripherals manufactures computer circuit boards from purchased components. In the process, pre-etched boards, integrated circuits, and other components are acquired, assembled and tested. The electrical contacts are soldered with an auto-flow solder machine. The flux and excess solder is washed from the boards by one of three water-base degreasing machines. The company has just made a process change utilizing an aqueous solder flux and detergent flush to avoid generation of petroleum solvent wastes. As seen in Table 3.5, the metal concentrations in the wastewater discharge are of this process. Comparing this data to the Categorical Standards set in Table 3.2, the wastewater discharges represented by this analysis are within the maximum limits with the exception of the lead concentration. Rapid City will conduct additional monitoring and work with the company to ensure that the discharge is within compliance by the deadline for this Categorical Standard (January 28, 1984). Additional monitoring will determine compliance of both the process stream with Categorical Standards, and the combined stream with limits set in the Code.

- Servall Laundry Servall cleans uniforms, towels, and other goods for industrial and commercial customers. The laundry processes about 60,000 lbs/day of goods and discharges over 38,000 gpd of wastewater. The process consists of commercial washing using water, detergent, bleach, and caustic. Goods are then dried, pressed, and packaged. Wastewater from washing is pumped into a sump interceptor to settle out grit and other solids before discharge to the sewer. The POTW is particularly concerned over oil and grease, detergents and pH. Some wastewater characteristics are shown in Table 3.5. It appears from this data that Servall is violating limits set for oil and grease, zinc and lead. However, the current data is preliminary since samples are taken upstream from the interceptor and there is no access for sampling downstream. The POTW is working with with Servall to determine the best location for a sampling port. Under the ordinance, Sewall will be required to install and maintain this sampling site. Once an appropriate sampling site is provided, more accurate data will be obtained and determination of compliance and the need for pretreatment will be possible.

- Black Hills Packing Co. Black Hills slaughters and processes about 300 head of cattle per day, four days per week. The plant also cuts and processes pork, making sausage and bacon. Skin, bone, and fat are disposed of in sanitary landfill, whereas the blood, paunch, washwater and other liquid wastes are segregated and pretreated prior to sewer discharge. The pretreatment process consists of rotating screens, primary settling, and a flotation cell for grease removal. The plant has a large flow volume discharging over 250,000 gpd; however, after pretreatment, the BOD loading ranges from 1100 to 1300 lbs/day (500 to 600 mg/l). This loading has not affected the POTW operations to the extent that permit violations occur.

- Brown Swiss Milk Co. This is a milk and cottage cheese manufacturing facility producing about 150,000 lbs of bottled milk and 7,600 lbs of cottage cheese per day. The high BOD concentrations (about 4700 mg/l as seen in Table 3.5) result primarily from the cottage cheese process where the separated milk whey (about 3,000 gpd) is wasted. Recovery of the whey is being considered to reduce the company's sewer charges. The organic loading has not caused POTW interference or permit violations.
- Black Hills Milk Producers This company processes raw milk to make butter and non-fat dry milk powder. In the process, milk fat is separated to make butter and the skimmed milk is then dried to produce the powder. Wastewater results from washdown and the evaporated milk water. While the BOD concentrations are not extremely high (470 mg/l in Table 3.5), the volume flow is almost 50,000 gpd and the plant has a past history of spills or slug loads. The company currently notifies the treatment plant when a load of milk (usually spoiled) is dumped into the system. This occurs about once per year.

3.4 UPDATE INDUSTRIAL SURVEY

Rapid City will update its IWS on an ongoing basis to identify new industries and to reflect changes in existing industries' process and waste characteristics. The Wastewater Department will be informed of new businesses in town by the City Finance Office which issues sales tax licenses and the Office of Public Works which issues permits for building and inspections. Prior to sewer hook-up, the Superintendent will send them, if warranted, an industrial waste permit application and notify them of the current sewer use requirements. Updating existing IU records will be accomplished primarily by data generated from the monitoring program. The Superintendent will redistribute industrial waste permit applications every two years on an as-needed basis to the industrial users not being monitored in an attempt to detect modifications in their process and waste characteristics.

SECTION 4

LEGAL AUTHORITY

Introduction

The General Pretreatment Regulations (40 CFR 403) dated January 28, 1981 requires POTWs to have the legal authority to apply and enforce the requirements of Section 307(b) and (c) and 402(b)(8) of the Clean Water Act and any regulations implementing those sections. At a minimum, this legal authority must meet the requirements of Section 403.8(f)(1)(i-vii).

Rapid City has developed this legal authority to extend over all of its industrial users, including those located outside of the City limits. As specifically referred to in the submitted City Attorney's letter, the wastewater treatment plant has the authority to:

- Deny or condition new or increased contribution of pollutants or changes in the nature thereof, when such contributions will exceed standards or cause a violation of the POTW's NPDES permit.
- Require industrial users to comply with applicable pretreatment standards and requirements, including specific prohibitive discharge limits set by the City.
- Control the contribution of each industrial user by permit or other means to ensure compliance with standards and requirements.
- Require industrial users to develop compliance schedules for installation of technology necessary to meet standards and to submit notices and self-monitoring reports to the POTW to assess compliance measures.
- Enter the premises of an industrial user to perform all inspection, surveillance, and monitoring procedures necessary to evaluate compliance.
- Seek injunctive relief in the case of noncompliance, assess penalties, and prevent or halt discharges that appear to present an imminent danger to health or the environment or interfere with POTW operations.

- Provide confidentiality where necessary to protect industrial user's trade secrets.

To demonstrate this authority for pretreatment program approval, Rapid City has submitted the following which are included in Appendix C:

Exhibit I - City Attorney's statement outlining the legal basis of the program.

Exhibit II - A written endorsement of the program by the Rapid City Common Council

Exhibit III - The Rapid City's Code, Chapter 30

Exhibit IV - Sewer Service Agreement and Pretreatment Agreement between Rapid City and Rapid Valley Sanitary District.

Exhibit V - Rapid City's Industrial Waste Permit

The Pretreatment Provisions of the Sewer Service Agreement provides Rapid City with adequate legal authority to enforce pretreatment requirements within the Rapid Valley District whether the program is administered by Rapid City or Rapid Valley District. The proposed Pretreatment Agreement serves both as a supplemental contractual agreement and as a guidance document and outlines the programmatic procedures for Rapid City to administer the pretreatment programs in any outlying jurisdiction serviced.

SECTION 5

PROGRAM PROCEDURES

Rapid City has developed procedures necessary to ensure compliance with the requirements of the pretreatment program. Procedures for the following program elements were developed to assist implementation of the pretreatment program:

- Permitting process
- Notification of requirements to industrial users
- Industry self-monitoring reports and other notices
- Monitoring and inspection activities
- Investigation of noncompliance
- Public participation

5.1 PERMITTING PROCESS

All Class I significant industrial users are required to have a discharge permit. Rapid City will determine if the IU is significant, distribute the permit package, review the returned permit application, recommend specific permit conditions and then issue the permit. The permit conditions will be developed based on the permittee's discharge characteristics and on the specific limitations posed in the Rapid City Code. The overall permitting process to be used by Rapid City including the Rapid Valley District role is shown in Figure 5.1. For the one industry within Rapid Valley District, Rapid City will conduct much of the permitting administration and will direct Rapid Valley to authorize and issue the permit.

The permit package will include an application form, a copy of Chapter 30, Division 3 of the City Code, and any Categorical Pretreatment

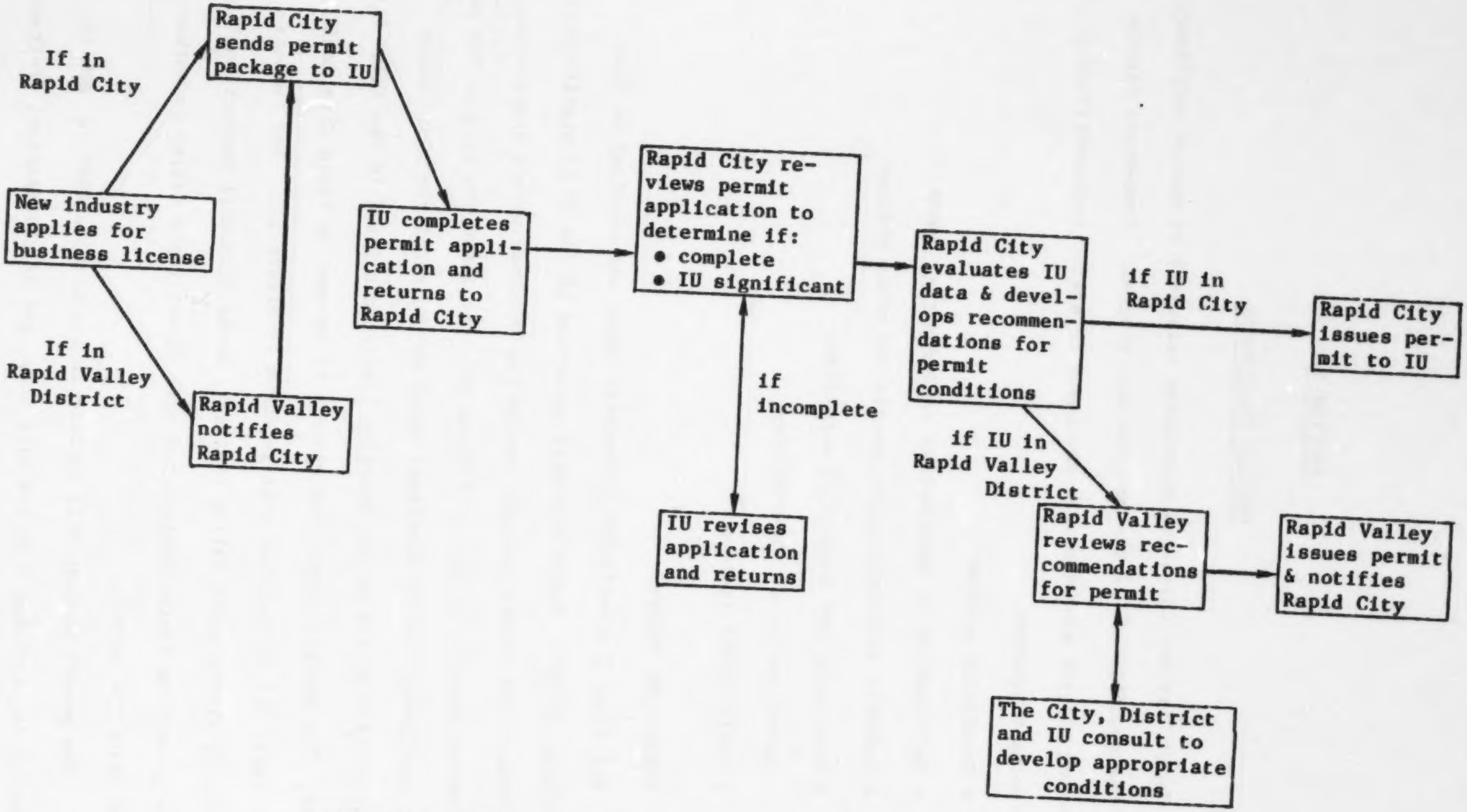

If in Rapid City
New industry applies for business license
If in Rapid Valley District
Rapid City sends permit package to IU
Rapid Valley notifies Rapid City
IU completes permit application and returns to Rapid City
Rapid City reviews permit application to determine if:
● complete
● IU significant
if incomplete
IU revises application and returns
Rapid City evaluates IU data & develops recommendations for permit conditions
if IU in Rapid City
Rapid City issues permit to IU
if IU in Rapid Valley District
Rapid Valley reviews recommendations for permit
Rapid Valley issues permit & notifies Rapid City
The City, District and IU consult to develop appropriate conditions

FIGURE 5.1 PERMITTING PROCESS FOR RAPID CITY PRETREATMENT PROGRAM

Standards that may apply. An example of the permitting form currently proposed is shown as Exhibit IV in Appendix C.

5.2 NOTIFICATION OF REQUIREMENTS TO INDUSTRIAL USERS

Rapid City will notify all industrial users (IUs) included in the pretreatment program of any applicable pretreatment standards (local and Federal) as well as applicable requirements under Sections 204(b) and 405 of the Clean Water Act and Subtitles C and D of the Resource Conservation and Recovery Act. To stay informed of new pretreatment regulations being issued, the Wastewater Department will be contacted by the City Planning Department which currently receives and reviews the *Federal Register*. The Wastewater Department will also review the *Federal Register* listings on a regular basis to ensure that new regulations are identified.

The Wastewater Department will initiate the pretreatment program by personally contacting the IUs and informing them of applicable standards, the monitoring program, and the permitting procedure. IUs requiring a permit will be formally notified of regulations by the permit package it receives. The Class II Minor IUs will be notified by letter including copies of the applicable sections of the City Code. As new Federal or local requirements are issued, the Wastewater Department will notify via letter existing users of applicable pretreatment standards as well as other relevant requirements under the Clean Water Act and Resource Conservation and Recovery Act. Federal pretreatment standards will be made a condition of the industrial waste permit, and as EPA promulgates new standards, affected IUs will have existing permit conditions modified to incorporate explicitly the new standards.

5.3 INDUSTRY SELF-MONITORING REPORTS AND OTHER NOTICES

The Wastewater Department will receive and analyze self-monitoring reports and other notices submitted by IUs according to the reporting requirements in Section 403.12 of the Federal pretreatment regulations. As required, industrial users will submit reports directly to the Wastewater Department. Industry samples must be analyzed at a State-certified laboratory; all measurements, sampling, and analyses will follow procedures in _Standard Methods for the Examination of Waste and Wastewater._ The frequency of sampling and the pollutants to be analyzed by the IU will be stated in the industrial waste permit.

Five types of reports or notices are to be submitted to the Wastewater Department by IUs subject to Federal Categorical Pretreatment Standards. These reporting procedures will apply to the one categorical industry (Magnetic Perpherals) discharging into the Rapid City system and be used as guidelines for other industrial self-monitoring. The types of reports required include:

1. A baseline report to be filled within 180 days of the effective date of a Federal categorical standard and containing:
    a. Name, address, owner, and operator of facility
    b. List of any environmental control permits held by facility
    c. Description of facility's operation
    d. Flow measurement data
    e. Certified statement indicating whether or not pretreatment standards are being met on a consistent basis; and if not, whether additional operation and maintenance (O&M) and/or additional pretreatment are required
    f. Schedule of compliance, if additional O&M and/or pretreatment are required to meet pretreatment standards.
2. Progress reports for compliance schedule milestones in permit
3. Compliance data report indicating compliance with categorcal standards deadlines

4. Semi-annual reports on continued compliance

5. Notice of slug loading.

The Wastewater Department may consider a laboratory report invalid if:

- The analysis is incomplete and the discharger does not submit a supplemental analysis within 30 days of being notified of the deletion
- A State-certified laboratory and "standard methods" procedures are not used
- Results of the analysis report cannot be verified by the laboratory
- If it is discovered that the monitoring equipment has been tampered with or readjusted, or the wastewater loadings and/or flow have been adjusted or changed to reflect an atypical situation.

When any of these conditions occur, the Wastewater Department will officially notify the IU that it is considered in violation of the ordinance and may be liable for civil or criminal prosecution.

According to the City Code, the Wastewater Department also must be informed from any industry of significant changes in type or amount of effluent discharged, or any modifications to its sewer connection. A letter requesting approval of such changes and/or modifications is required by permit conditions if the discharge modification will be a regular occurrence. The written request will be evaluated based on ordinance provisions and Federal requirements, and either approve and issue a new permit, or reject the request.

5.4 MONITORING AND INSPECTION ACTIVITIES

Rapid City will randomly sample and analyze IU discharges in the City and the Districts and will conduct surveillance and inspection activities in order to identify, independent of information supplied by IUs, occasional and continuing noncompliance with pretreatment standards. All Class I significant industrial users are required to install and maintain a manhole or other suitable site for sampling their wastewater. Under contractual agreement, Rapid City has right of access to the entire sewer system of each serviced District and to the point of industry discharge on private premises. The Wastewater Department will maintain analysis and inspection data in industry files and will send copies to the Districts of all monitoring results and correspondence with IUs in that District.

All sampling and analysis activities will conform with procedures in Standard Methods for the Examination of Water and Wastewater. Samples will be prepared in accordance with Table 5.1. The following references may also be used to assist in monitoring industrial wastes:

- Handbook for Monitoring Industrial Wastewater prepared by the U.S. Environmental Protection Agency (1973)
- NPDES Compliance Sampling Manual prepared by the U.S. Environmental Protection Agency (1977)
- Wastewater Sampling for Process and Quality Control (Manual of Practice No. OM-1), prepared by the Water Pollution Control Federation (1980).

The inspection/monitoring program planned for the Class I and II industries is shown in Table 5.2. The monitoring schedule described here is planned for the first two years of the pretreatment program. It may be more comprehensive than that eventually required because there is a need to better quantitatively characterize the industrial wastes. Once a minimum of six to eight representative samples of each industry's wastestream have been analyzed, the data will be interpreted to determine if the current inspection/monitoring schedule for that for that IU should be revised.

TABLE 5.1

BOTTLE PREPARATION[4]

Analytical Fraction	Sample Type	Bottle Type	Cap Liner	Bottle Size	Bottle Preparation	Preservatives	Sample Holding Times[5]
Conventionals (BOD, Residue)	Composite	Plastic	-	2 liter	DI rinse	Cool to 4°C	2 days
Conventionals Preserved (COD)	Composite	Glass	Polypropylene	1 liter	DI rinse	H_2SO_4 Cool to 4°C	28 days
Semivolatile Organics and Pesticides	Composite	Glass	Teflon	3 liter	DI, Methylene chloride rinse air dry (bake, optional)	Cool to 4°C	7 days
Volatile Organics	Grab	Screw Cap[2] Septa Vials	Teflon Silicone Septa	40 ml	DI rinse, bake[3] 135°C, 1 hour	Cool to 4°C Sodium thiosulfate for Cl residual	3 days
Metals	Composite	Glass	Teflon	1 liter	DI rinse	HNO_3	28 days
Phenols	Grab	Amber Glass	Polypropylene	1 liter	DI rinse	1 gram $CuSO_4$; H_3PO_4 to pH 4	28 days
Cyanide	Grab	Plastic	Polypropylene	1 liter	DI rinse	NaOh to pH 12 Ascorbic acid for Cl residual	14 days
Oil and Grease	Grab	Glass	Polypropylene	1 liter	DI rinse	H_2SO_4 to pH 2	28 days

1. All bottle preparation must be preceded by a deionized (DI) water rinse.
2. Available from Pierce, Wheaton or O. Berk.
3. Bottles and Septa only.
4. Sample pH and temperature must be measured at the sampling point.
5. Based on minimum holding time for a parameter within a fraction.

(Source:40 CFR 136,Proposed Guidelines Establishing Test Procedures for Analysis of Pollutants, Dec. 3,1979, p. 69594)

TABLE 5.2

COMPLIANCE ASSURANCE INSPECTION/MONITORING PROGRAM FOR RAPID CITY AND ASSOCIATED DISTRICTS

Industry	Minimum Inspection Frequency	Sample Type	Min. Sample Freq'y	Analysis Required
Class I				
Black Hills Milk	Semi-annually	12-hr composite	4/year	Standard
Black Hills Packing Co.	Quarterly	12-hr composite	4/year	Standard
Brown Swiss Milk Co.	Semi-annually	12-hr composite	4/year	Standard
Gillette Dairy	Semi-annually	12-hr composite	4/year	Standard
Magnetic Peripherals, Inc.	Quarterly .	24-hr composite	4/year	All Metals[1] CN
Servall Towel & Linen	Quarterly	12-hr composite	4/year	Standard[2], All Metals
Class II				
Black Hills Gold Creations	Annually	Grab composite[3]	2/year	Ni, Cu, Zn, CN, Au[4]
Hubbard Milling	Annually	12-hr composite	2/year	Standard
RC Western Meats	Annually	12-hr composite	2/year	Standard
Ramco Corp.	Annually	Grab composite[3]	2/year	Petroleum solvents, phenols, methylene chloride[4]
Rapid City Journal	Annually	Grab	2/year	Ag[4]
Rapid Film Service	Annually	Grab	2/year	Ag, Phenol, CN
Tepco, Inc.	Annually	Grab composite [3,5]	2/year	Cr, Cu, Pb, Zn, pH[6]
All restaurants and service stations	Annually	Grab	1/year	Standard-

---

[1] "All Metals" includes Cu, Zn, Cr, Ni, Pb, Cd, B, Ag

[2] "Standard" includes BOD or COD, pH, TSS, Oil & grease, and/or TKN

[3] Batch process, potential for spills

[4] Pollutants are optional for analysis

[5] Samples of combined discharge from several users at manhole

[6] pH will serve as an indicator for acid pollutants

The frequency of inspection and monitoring presented in Table 5.2 is based on volume and characteristics of pollutants discharged, known or suspected pollutants which can enter the wastestream during emergency spills, and the IU's history in complying with existing sewer use ordinance provisions. The sampling of each industry will occur on a random basis. When possible to do so, sampling will be conducted at a manhole or point of discharge into the public sewer without the knowledge of the industry. Access to one industry's discharge (i.e., Tepco - a small electronics firm) is not possible except at a downstream manhole combined with other user's wastewater. In this case, preliminary monitoring will determine if an individual sampling post for this industry will be necessary. The general approach taken in determining the minimum monitoring program can be summarized as follows:

- Those industries which discharge high strength wastes and/or process flow streams in excess of 50,000 gallons/day (gpd) should be inspected on a quarterly basis and have at least one 24-hour composite sample collected quarterly. The sampling frequency can be modified to reflect the presence/absence of strong organics, corrosives, or priority pollutants.

- Metal platers, circuit board printers, foundries, and other metal finishers should be inspected and monitored on at least a quarterly basis. A more frequent schedule may be required for those industries with unknown wastewater characteristics. Conversly, industries which discharge low flow or mass emissions may allow the City to reduce the level of effort associated with compliance assurance. Heavy metal analysis should be conducted on all samples unless it can be demonstrated that process waste flows have been eliminated.

- Food processing industries should be inspected and sampled on a quarterly basis, and monthly during high discharge seasonal production. Conventional pollutants and nitrogen compounds should be monitored.

- Colleges, hospitals, newspaper printing, photo-services, and other institutions which contain laboratories, film development services, and similar facilities which generate chemical wastes should be inspected and monitored at least once per year. Metal and solvent recovery should be encouraged. The discharge of disease-carrying tissues and culture plates should be discouraged. Incineration of these materials, or sterilization and disposal to solid waste, is a preferred disposal strategy.

- Large hotel accommodations, truck and automobile car washes, industrial towel and linen services, machine shops, and other commercial and service industries which discharge wastes other than domestic sanitary sewage should be inspected at least once per year and a representative sample taken and analyzed.

Throughout the sampling/analysis procedure, care will be taken to ensure that the data collected are admissible as evidence in enforcement or judicial actions. Chain-of-custody procedures between the Industrial Inspector taking the samples and the laboratory personnel will be followed.

5.5 INVESTIGATE NONCOMPLIANCE

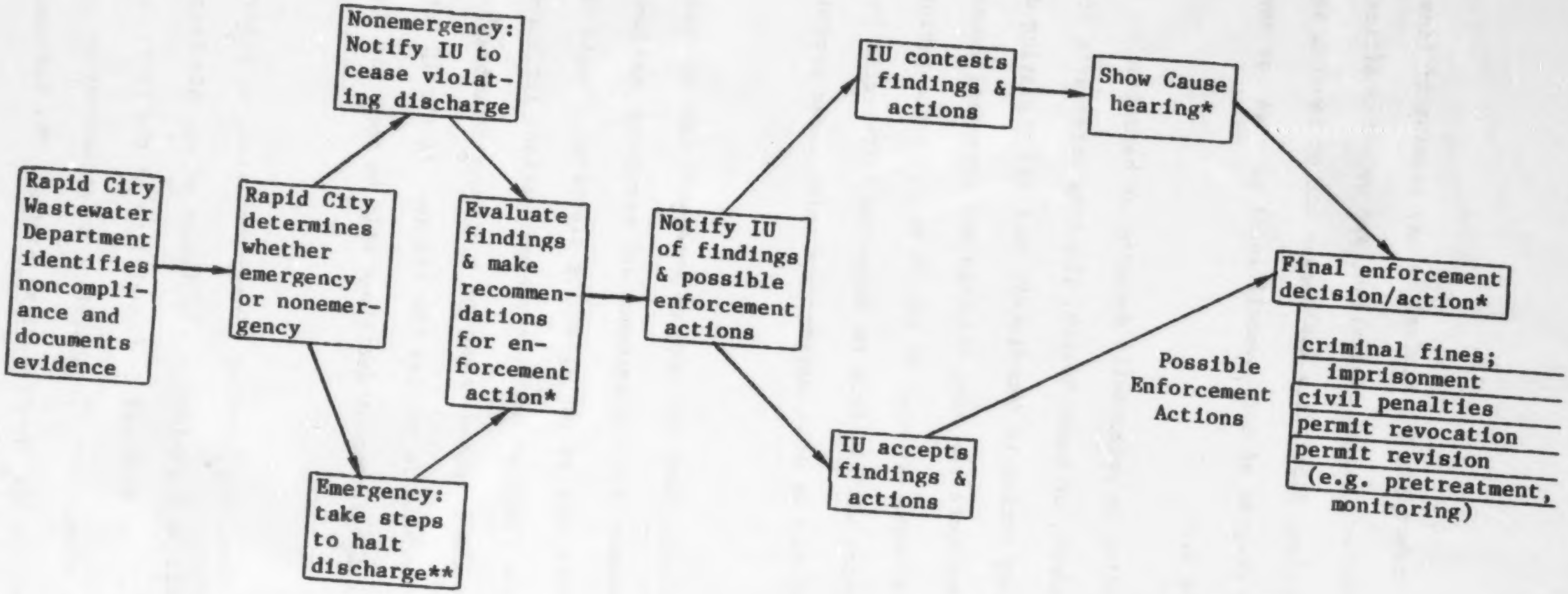
Rapid City will investigate instances of noncompliance with pretreatment standards and requirements and will collect and document the technical information necessary to pursue court action. As data is collected from reports and surveillance monitoring, the Wastewater Department will compare the information with local and/or Federal limitations to determine compliance or noncompliance. The data submitted will also be compared to previous reports submitted by the same user to discover changes in wastewater characteristics or water usage that may indicate changes in industrial processes. The Wastewater Department may log or plot the data to ascertain trends in levels. Since the ordinance of each District outside the City will provide the enforcement authority for their respective IUs, Rapid City will investigate noncompliance with the specific local and Federal requirements imposed. The Districts are required in the service agreement to adopt the applicable pretreatment sections of the Rapid City Code. The Wastewater Department will also document the evidence collected and make recommendations to the District for legal action. Once adequate evidence has been collected, the City Attorney's office will direct the case whether the District is involved or not.

Legal action undertaken for violations may consist of fines, imprisonment, penalties, permit revocation, and permit modification. In seeking such action, Rapid City may pursue one of several legal pathways. A flow diagram of this overall legal process for noncompliance is shown in Figure 5.2.

If the violation is potentially damaging or hazardous to the POTW, the environment, or human health, the City Attorney's office will recommend emergency action to immediately halt all violating discharges. Rapid City will evaluate the case findings and potential remedies and take steps toward legal action. If the IU contests the actions proposed, a show cause hearing will be held to reconcile differences in the case. When a final decision is made, appropriate enforcement action will be taken.

If the violation does not require emergency action, Rapid City will notify the IU summarizing the evidence and resulting problems and will request an immediate halt in the violating discharge. Rapid City will then evaluate the findings and make recommendations for remedies. If the IU contests the proposed remedy or continues to violate the limits, a hearing will be held to resolve the issues. If the IU accepts the remedy, the final enforcement decisions will be made and the legal action implemented.

In both cases, the level of fines, penalties, or permit modifications to be taken will be dependent on the impact of the discharge on health, the environment, or POTW and on the ability of the IU to pay the penalty/fine or remedy the situation. In addition, no action may be necessary if the IU complies within the specified time period. The Wastewater Department will


Rapid City Wastewater Department identifies noncompliance and documents evidence
Rapid City determines whether emergency or nonemergency
Nonemergency: Notify IU to cease violating discharge
Emergency: take steps to halt discharge**
Evaluate findings & make recommendations for enforcement action*
Notify IU of findings & possible enforcement actions
IU contests findings & actions
IU accepts findings & actions
Show Cause hearing*
Final enforcement decision/action*
Possible Enforcement Actions
criminal fines; imprisonment
civil penalties
permit revocation
permit revision (e.g. pretreatment, monitoring)

* District is involved in legal process if violation occurs within District
** Prior notification is recommended but not necessary to halting discharge

FIGURE 5.2

FLOW DIAGRAM FOR NONCOMPLIANCE ENFORCEMENT PROCESS be instrumental in revising the pretreatment and monitoring requirements in the IU's permit.

Rapid City will monitor and inspect industrial users in the outlying sanitary districts to enforce compliance of the Rapid City Code and the service agreement. If a violation occurs within a district, Rapid City will initiate enforcement action against the IU by investigating the case, documenting evidence, evaluating the findings, and recommending remedial actions to be taken by the district. The district will preside over the show cause hearing, if held, and take final enforcement actions. In cases where the district does not take the recommended remedial decree, Rapid City will seek legal action against the district (see Appendix C, Exhibit IV Sewer Service Agreement and Draft Pretreatment Agreement).

5.6 PUBLIC PARTICIPATION

Rapid City will comply with the public participation requirements of 40 CFR 25 in the enforcement of national pretreatment standards. A list of industrial users which, during the past twelve months, significantly violated applicable pretreatment standards or requirements, will be published each year in the Rapid City Journal. A significant violation is one which remains uncorrected 45 days after noncompliance notification or which is part of a pattern of noncompliance over a twelve-month period. A press release will also be provided to the paper when the pretreatment program goes into effect citing the objectives of the program and soliciting public documents and suggestions.

SECTION 6

ORGANIZATION AND FUNDING

6.1 PERSONNEL AND EQUIPMENT

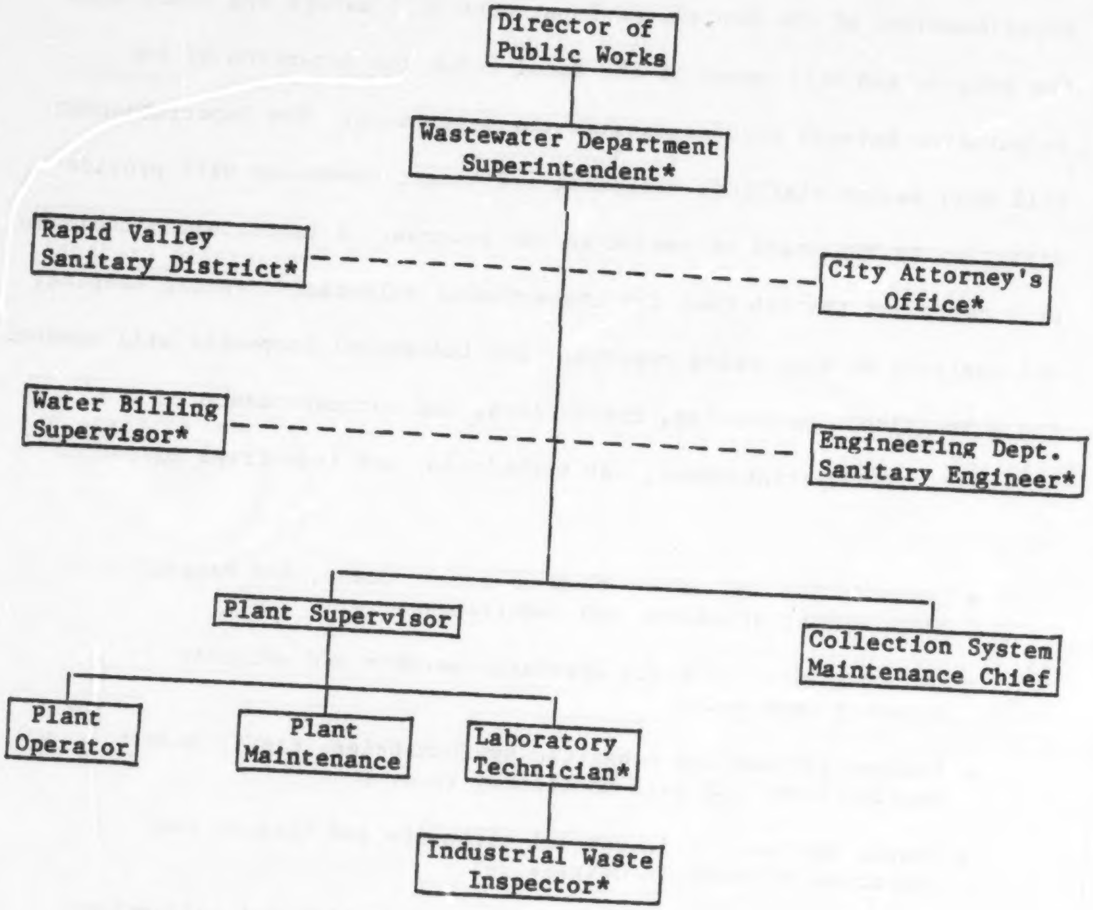
The organizational chart of the Wastewater Department which will operate the Rapid City Pretreatment Program is shown in Figure 6.1. The Superintendent of the Wastewater Department will manage and administer the program and will serve as the focal point for direction of and cooperation between parties outside the Department. The Superintendent will also assess staffing, equipment and budget needs and will provide direction to his staff as needed in the program. A laboratory technician will carry out the lab test for conventional pollutants, record keeping, and analysis of monitoring reports. The industrial inspector will conduct the surveillance monitoring, inspections, and correspondence to IUs. Together, the Superintendent, lab technician, and industrial inspector will:

- Identify IUs and notify them of local, State, and Federal pretreatment standards and requirements
- Review industrial waste discharge permits and maintain industry user files
- Analyze information submitted by industries, the IU permit applications, and self-monitoring reports
- Sample and monitor industrial effluents and inspect the operation of local industries
- Coordinate program activities and information and collection/distribution, especially in the identification of industrial problems and in legal enforcement actions.

Calculations of charges and billing will be conducted by the Water Billing Supervisor. A computerized system bills most of the sewer users based on water consumption. Some industrial users are charged manually

FIGURE 6.1

ORGANIZATION FOR RAPID CITY'S PRETREATMENT PROGRAM


Director of Public Works
Wastewater Department Superintendent*
Rapid Valley Sanitary District*
City Attorney's Office*
Water Billing Supervisor*
Engineering Dept. Sanitary Engineer*
Plant Supervisor
Collection System Maintenance Chief
Plant Operator
Plant Maintenance
Laboratory Technician*
Industrial Waste Inspector*

*Involved with Pretreatment Program

for wastewater volume and strength from monitoring data collected. The City Attorney and his Assistant will assist in legal areas such as enforcement actions and the development and review of permit conditions. A Sanitary Engineer will help by designing monitoring manholes, developing permit conditions, reviewing planned pretreatment technologies, and troubleshooting treatment plant O&M problems. The collection and maintenance crew will assist on an as-needed basis in the surveillance of industrial discharges during their regular cleaning and televising of sewer lines.

Since many activities required by the pretreatment program are already being conducted by the Wastewater Department, the existing staff is expected to be able to handle the additional work involved. Table 6.1 shows the various tasks within the program operations with the employees involved and the anticipated labor hours. Since there are only six significant industrial users requiring permits, the level-of-effort for permitting is not expected to be substantial. The majority of the labor hours for the program will be expended in sampling, analysis, and compiling of monitoring reports. Based on the monitoring schedule (see Table 5.2) as a minimum level-of-effort, the labor hour for Tasks 3, 4, and 5 are projected. A commercial laboratory will conduct the metals and organics analysis with about 150 individual analyses estimated from the monitoring schedule. It is assumed that one noncompliance case per year will be initiated requiring assistance from the City Attorney's office. Additional work requested from other City staff will be conducted on an as-needed basis.

TABLE 6.1 PROGRAM TASKS AND ESTIMATED LABOR REQUIREMENTS

Tasks	Employees	Approximate Hours
1. Notification of Industries	S,I,C	S-20 I-80 C-20
2. Permitting Process		S-20 I-80 A-40 E-40 C-40
o distribute applications	S,I,C	
o review applications returned	S,E	
o develop permit conditions	E,A	
o issue permit	S,A,I,C	
3. Sampling & Inspection	I	I-1500
4. Laboratory Analysis	L,C	L-420 C-60
5. Analysis of Industry Information o monitoring reports o pretreatment plans	I,L,E	I-200 L-100 E-40
6. Noncompliance Investigation	I,A	I-140 A-40
7. Miscellaneous Technical Assistance	E	E-80
8. Management and Administration	S,B,C	S-220 B-80 C-80

Total Hours: S=260 I=2000 L=520 E=160
A=80 C=200 B-80

Note: S = Superintendent; I = Inspector; L = Laboratory; E = Engineer
A = Attorney; C = Clerical; B = Billing

The wastewater plant currently possesses sufficient equipment to operate the program. The inspector uses a vehicle, two automatic samplers and several flow meters in his activities. Samplers are also installed at three of the significant industries for regular use. Conventional pollutants will be analyzed at the wastewater plants' laboratory which is totally outfitted for basic wet chemistry. The more sophisticated analysis will be conducted by a local commercial laboratory.

6.2 PROGRAM COSTS AND FUNDING SOURCES

The Wastewater Department has estimated the costs of operating the pretreatment program as shown in Table 6.1. The costs incurred in the development of the program, such as those for the industrial survey and and revision of the ordinance have been minimal and are not included. Since no capital expenditures are expected for major equipment, the program costs will be made up primarily of labor and other operating costs. Table 6.1 shows the additional effort estimated for each labor group and the relative costs.

The $41,120 cost of the pretreatment program is recovered in revenues generated from a user charge system based on wastewater volume and strength. The 1981 charge rate for all users was $0.49 per 100 cubic feet; in 1982, this rate is being adjusted to $0.70 to meet growing revenue demands and to accumulate capital improvement funds for tertiary treatment at the plant. Industrial users are charged a surcharge of $0.0075 per 50 mg/l increment over 250 mg/l for BOD and 300 mg/l for suspended solids. The total sewer budget for 1981 was about $1,200,000. It is estimated that the Class I and II industrial users generated about $161,000 in revenues in 1981 or about 13% of the total budget. The

TABLE 6.2

OPERATING COSTS FOR PRETREATMENT PROGRAM

Labor		
• Administration		
- 260 hours	$ 3,770	
- 200 hours	900	
• Laboratory		
- 520 hours	5,720	
• Inspection		
- 2,000 hours	21,000	
• Legal		
- 80 hours	1,600	
• Engineering		
- 160 hours	2,400	
• Billing		
- 80 hours	1,000	
Total Labor Costs		$36,390
Other Operating Costs		
• Vehicle (rental, fuel, etc.)	2,730	
• Commercial laboratory	2,000	
Other Operating Costs		$ 4,730
Total		$41,120

strength surcharges generate about $18,000 a year in additional revenues from the six industries charged. The other industries pay the flat rate for consumption. The two Class I industries which do not pay strength surcharges (Servall Laundry and Magnetic Peripherals) will be charged directly for the monitoring expenses incurred by the City. Once the new sewer rates go into effect, the charges for all industrial users will be evaluated and if they are found to be inequitable with relation to overall service rendered, the charges will be adjusted.

APPENDIX A

INDUSTRIAL WASTE QUESTIONNAIRE

INDUSTRIAL WASTE QUESTIONNAIRE

GENERAL INFORMATION

Standard Industrial Classification Code (SIC): 2077

COMPANY NAME: Black Hills Packing Co.

MAILING ADDRESS: Drawer 2130 Rapid City, SD 57709

ADDRESS OF PREMISES: 1330 West Chicago St., Rapid City, SD 57701

NAME AND TITLE OF SIGNING OFFICIAL: Walter A. Wilson, Chief Eng.

CONTACT OFFICIAL

NAME: Walter A. Wilson TITLE: Chief Eng.

ADDRESS: Drawer 2130 Rapid City, SD 57709

PHONE: 343-1414

The information contained in this questionnaire is familiar to me and to the best of my knowledge and belief, such information is true, complete, and accurate.

Walt Wilson

(Signature of Official) 8-29-80 (Date)

PLANT OPERATIONAL CHARACTERISTICS

Brief description of manufacturing or service activity on premises:

Cattle slaugher & processing

Sausage Manufacturing

Inedible Rendering

Principal Raw Materials Used: Meat & Meat by-products

Catalysts, Intermediates: None

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INDUSTRIAL WASTE QUESTIONNAIRE

Principal Product or Service (use Standard Industrial Classification Manual if appropriate): Wholesale Meat Sales

Type of Discharge: ____________ Batch ____X____ Continuous

If batch, average number of batches per 24 hours: ____________

Is there a scheduled shutdown?: No

When?: ____________

Is production seasonal?: No

If yes, explain, indicating month(s) of peak production: ____________

Average number of employees per shift: 150 1st 10 2nd 1 3rd

Shift start times: 0630 1st, 1500 2nd, 2200 3rd

Shifts normally worked each day:

	SUN	MON	TUE	WED	THU	FRI	SAT
1st		X	X	X	X	X	
2nd		X	X	X	X	X	
3rd	X	X	X	X	X	X	

Describe any wastewater treatment equipment or processes in use: Rotary screen and primary clarification

Raw Water Sources:

Source	Quantity	
City water	70,000	gals. per day
Well water	115,000	gals. per day
Creek water	114,000	gals. per day

Describe any raw water treatment processes in use: Well water is chlorinated. Cold water to Hot water heat exchangers treated with poly-phosphate 4 to 8 p.pm,

List Water Consumption in Plant:

Cooling water	14,000	gallons per day
Boiler feed	5,000	gallons per day
Process water	273,500	gallons per day
Sanitary system	6,000	gallons per day
Contained in product	500	gallons per day
Other	5,500	gallons per day

List average volume of discharge or water loss to

City wastewater sewer	273,500	gallons per day
Natural outlet	0	gallons per day
Waste hauler	0	gallons per day
Evaporation	29,000	gallons per day
Contained in product	500	gallons per day

Is discharge to sewer ______ Intermittent __X__ Steady

List plant sewer outlets, size, flow (attach and refer to map):

A 8" outlet to *cs - 260 gpm max

B 6" inlet to *wwp - 2 gpm

C 6" inlet to *wwp - 220 gpm

D 6" inlet to *wwp - 20 gpm

E 6" inlet to *wwp - 18 gpm

F 4" outlet to *cs - 5 gpm max. *wwp Waste Water Plant

G 6" outlet to *cs - 20 gpm max. *cs city sewer

Is there a Spill Prevention Control and Countermeasure Plan in effect for this plant?

______ Yes __X__ No

INDUSTRIAL WASTE QUESTIONNAIRE

Are any of the toxic pollutants listed in Table 1 being used at this facility in manufacturing of the product or is a by product which may be discharged? If so, please indicate by a check mark on Table 1.

TABLE - 1

65 Toxic Pollutants Listed In Consent Decree and Referenced in 307(a) of the CWA of 1977

Acenapthene
Acrolein
Acrylonitrile
Aldrin/Dieldrin
Antimony and compounds
Arsenic and compounds
Asbestos
Benzene
Benzindine
Beryllium and compounds
Cadmium and compounds
Carbon tetrachloride
Chlordane
Chlorinated benzenes
Chlorinated ethanes
Chlorinalkyl ethers
Chlorinated naphthalene
Chlorinated phenols
Chloroform
2-chlorophenol
Chromum and compounds
Copper and compounds
Cyanides
DDT and metabolities
Dichlorobenzenes
Dichlorobenzidine
Dichloroethylenes
2, 4-dichlorophenol
Dichloropropane & Dichloropropene
2, 4- dimethylphenol
Dinitrotoluene
Diphenylhydrazine
Endosulfan & metabolites
Endrin and metabolites
Ethylbenzene
Fluoranthene
Haloethers
Halomethanes
Heptachlor and metabolites
Hexechlorobutadiene
Hexachlorocyclopentadiene
Hexachlorocylohexane
Isophorone
Lead and compounds
Mercury and compounds
Naphthalene
Nickel and compounds
Nitrobenzene
Nitrophenols
Nitrosamines
Pentachlorophenol
Phenol
Phthalate esters
Polychlorinated byphenyls (PCB)
Polynuclear aromatic
hydrocarbons
Selenium and compounds
Silver and compounds
2, 3, 7, 8, -Tetrachlorodibenzo-
p-dioxin (TCDD)
Tetrachloroethylene
Thallium and compounds
Toluene
Toxaphene
Trichloroethylene
Vinyl Chloride
Zinc and compounds

List any other toxicants known or anticipated to be present in the discharge: ______

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PRETREATMENT

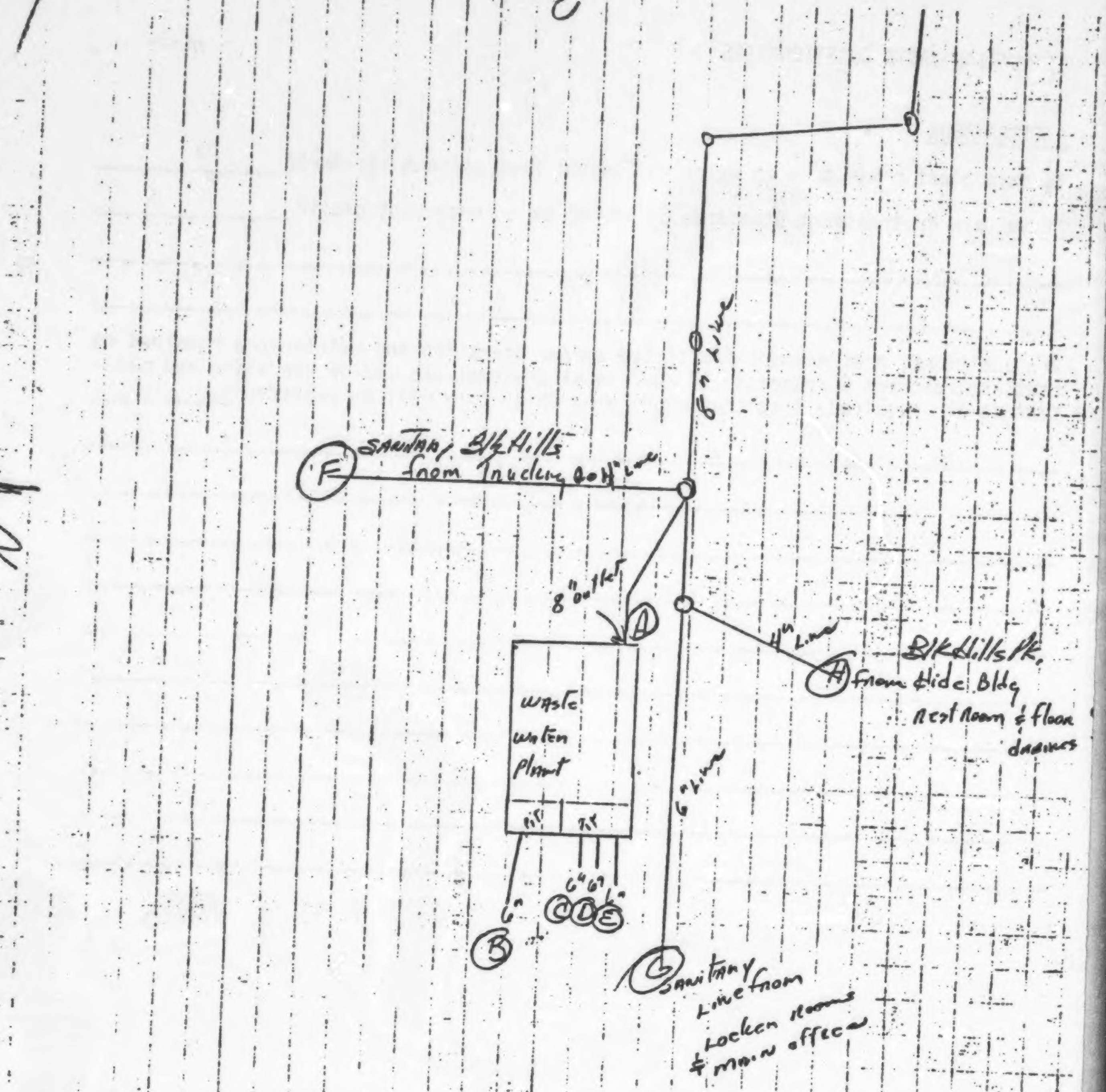
Is this plant subject to an existing Federal Pretreatment Standard? No

If so, are Pretreatment Standards being met on a consistent basis?

Are additional pretreatment facilities and/or operation and maintenance required to meet Pretreatment Standards? If additional pretreatment and/or operation and maintenance are required, list the schedule by which they will be provided:

No

A-6


N
F
SANITARY Blk Hills from Trucking Dock 4" Line
8" Line
8" outlet
A
waste water plant
6"
B
6" 6" 4"
C D E
Blk Hills Pk. from Hide Bldg Rest Room & floor drains
4" Line
H
6" Line
G
Sanitary Line from Locker Rooms & Main office

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APPENDIX B - Rapid City Restaurants and Service Stations

Currently, all Rapid City service stations are required to have interceptors prior to discharge to the public sewer. In the past, new restaurants in the city have been required to install interceptors while some of the older restaurants have not. Under Section 30-167 of the Code, the City will request all restaurants to install and maintain interceptors. A list of establishments is provided here along with their status on the installation of interceptors or grease traps.

APPENDIX B

RAPID CITY RESTAURANTS

ACCOUNT NO.	LOCATION	COMMENTS
	East North Street & Vicinity	
011-282003	Peking - 1126 E. North Street	Grease barrel - No trap
011-270001	K-Mart - 1111 E. North Street	Grease trap
011-250004	Hardee's - 1111 E. North Street	Grease barrel - Trap
011-280002	Mr. Donut - 1122 E. North Street	Grease barrel - No trap
011-275001	Bonanza - 1118 E. North Street	Grease barrel - No trap
011-230002	Burger King - 1002 E. North Street	Grease barrel - No trap
011-220001	Kentucky Fried Chicken - 918 E. North Street	Grease barrel - No trap
011-197002	Dakota House - 815 E. North Street	Grease barrel - No trap
011-200001	McDonald's - 804 E. North Street	Grease troughs - No trap
011-187002	Sambo's - 717 E. North Street	No trap
011-140002	Good Eater Cafe -	No trap
011-090002	Great Wall - 315 E. North Street	No trap
027-015008	Coachman Family Restaurant - 120 E. Blvd.	No trap
027-052501	Safeway - 315 E. Blvd.	Trap in meat department
011-180002	Wendy's - 701 E. North Street	Grease trap
027-040002	Parkway Cafe - 312 E. Blvd. North	Grease trap
011-210004	Taco Bell - 902 E. North Street	Grease trap
011-186001	Pizza Hut - 705 E. North Street	Grease trap
	West Main Street & Vicinity	
003-540001	Snow White Drive Inn - 1123 St. Joe	No trap
003-768002	Mr. Donut - 1925 W. Main	Grease barrel - No trap
003-770001	Kentucky Fried Chicken - 1918 W. Main	No trap
073-547501	Arby's - 535 Mt. View	Grease trap
086-387001	Country Kitchen - 2010 W. Main	No trap

ACCOUNT NO.	LOCATION	COMMENTS
	West Main Street & Vicinity (Cont.)	
073-540003	Wendy's - 520 Mt. View	Grease trap
073-535501	Burger King - 515 Mt. View	No trap
086-400001	Happy Chef - 2121 W. Main	No trap
086-420001	McDonald's - 2223 W. Main	Grease barrel - Trap
086-455001	Randy's Pizza Barrel - 2421 W. Main	No trap
086-467001	Pizza Hut - 2600 W. Main	No trap
086-533001	Taco John's - 3020 W. Main	No trap
086-540004	Brown's Palace - 3120 W. Main	No trap
089-575002	Chuck Wagon - 3609 Sturgis Road	No trap
089-625001	Meadowood Lanes - 3809 Sturgis Road	No trap
086-426002	Taco Bell - 2323 W. Main	Grease trap
	Downtown & Vicinity	
003-377002	Pyrenees - 909 St. Joe	Grease trap
003-260003	Commodity Exchange - 712 St. Joe	No trap
002-370001	Woolworth's - 625 Main	Trap under building
002-304002	Firehouse - 610 Main	Grease trap
024-190001	Tally's - 530 6th Street	Grease trap
003-095003	Landmark - 523 6th Street	Traps in both kitchens
002-177001	VFW - 420 Main	No trap
003-045001	Duane's House of Pizza - 510 St. Joe	No trap
003-020001	Tip Top Motel - 405 St. Joe	Grease barrel - No trap
002-085001	Imperial 400 - 125 Main	Grease barrel - No trap
027-155003	Red Garter - 318 E. Blvd.	Grease barrel - No trap
060-015002	Sprout House - 429 Kansas City	Grease barrel - No trap
001-540001	Hall Inn - 214 E. St. Joe	Grease barrel - No trap

ACCOUNT NO.	LOCATION	COMMENTS
	St. Patrick Street & Cambell Street	
044-595001	Robbinsdale Lanes - 805 E. St. Patrick	Grease barrel - No trap
044-625001	Moose - 841 E. St. Patrick	No trap
044-705003	K-P Drive Inn - 1203 E. St. Patrick	No trap
044-697001	Tim's Take-Out - 1202 E. St. Patrick	No trap
044-747005	Railhead Restaurant - 1402 E. St. Patrick	Grease trap
044-765001	Family Thrift Center - 1516 E. St. Patrick	Grease barrel - No trap
065-017001	Taco John's - 1710 Cambell	Grease barrel - No trap
028-045001	Happy Joe's - 211 Cambell	Grease trap
	Mt. Rushmore Road & Vicinity	
002-575003	Silver Grill - 430 8th Street	No trap
061-043001	JB's - 801 8th Street	No trap
061-055001	Family Submarine Shop - 821 8th Street	No trap
061-357003	Dairy Queen - 1702 8th Street	No trap
061-365001	Village Inn - 1720 8th Street	No trap
061-380001	Casa Del Ray - 1902 8th Street	No trap
061-397001	Pizza Hut - 2005 8th Street	No trap
061-412002	Safeway - 2118 8th Street	Traps-Kitchen & Meat Dep.
047-610001	Ramada Inn - 2205 8th Street	Grease barrel - No trap
061-495004	Colonial - 2501 8th Street	Grease barrel - No trap
050-345001	McDonald's - 720 Cleveland	Grease barrel - Trap
048-727001	Shakey's - 720 Indiana	No trap
048-728003	Don Rafael's - 721 Indiana	Grease trap
061-450002	Perkin's Cake & Steak - 2305 8th Street	Grease trap
061-001002	Hilton - 445 8th Street	Grease trap
	Jackson Blvd. & Canyon Lake Drive	
073-655001	Safeway - 730 Mt. View	No trap

ACCOUNT NO.	LOCATION	COMMENTS
	Jackson Blvd. & Canyon Lake Drive	
068-112001	Sambo's - 719 Jackson Blvd.	No trap
100-095002	Turgeion's - 4205 Jackson Blvd.	No trap
085-205001 085-206001	Daisy Dell - 3939 Canyon Lake Drive	Grease barrel - No trap
085-075001	Dairy Queen - 3535 Canyon Lake Drive	Grease barrel - No trap
	LaCrosse Street	
031-280001	Howard Johnson's - 2211 LaCrosse	Grease trap in basement
031-270002	Holiday Inn - 1902 LaCrosse	No trap - trap was taken out; nothing but trouble
030-123501	Sizzler Steak House - 2601 Maple	Grease trap
030-165501	Mr. Steak - 2125 N. Haines	Grease trap
031-274002	Happy Chef - 2110 LaCrosse	Grease trap

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RPAID CITY SERVICE STATIONS EITH GREASE TRAPS

ACCOUNT NO.	LOCATION	COMMENTS
100-280001	Al's Conoco - 3483 Sturgis Road	Service
069-100005	Archie's Triangle Texaco - 1029 Jackson Blvd.	Service
086-380002	Baken Park Mobil - 2001 W. Main	Service
044-660001	Big D Oil Station - 919 E. St. Patrick	Wash
086-527001	Big D Oil Station & Car Wash - 3010 W. Main	Wash
032-135001	Black Hills Standard Service - 1935 W. Main	Service
023-595001	Bob's Auto Service - 1027 Farlow	Service
100-025001	Bob's Conoco Service - 3928 Canyon Lake Drive	Service
069-380002	Bob's Muffler Service - 1322 8th Street	Service
082-315001	Canyon Lake 66 Service - 4128 Jackson Blvd.	Service
031-340001	Cochran's Friendly Service - 202 Main	Service
031-540003	E. North Street Conoco - 230 E. North Street	Service
002-095001	Patron's Coop - 224 Main	Service
069-365004	Dakota Standard - 721 8th Street	Service
069-270002	Don's Texaco - 1440 E. St. Patrick	Service
061-370002	Harvey's Mobil Service - 1808 8th Street	Service
031-283002	I-90 Standard - I-90 at LaCrosse	Service
031-545002	JB Standard - 302 E. North Street	Service
069-250002	Kwick Stop - 304 E. St. Patrick	Wash
001-115001	Lowell's Service Station - 128 E. Main	Service
011-209004	North Gate Mobil - 901 E. North Street	Service & Wash
061-485004	Rushmore Mobil - 2420 8th Street	Service
031-575001	North Street 66 - 634 E. North Street	Service & Wash
061-462005	Ken's Texaco - 2316 8th Street	Service
031-272001	Holiday 66 - LaCrosse & I-90	Service

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ACCOUNT NO.	LOCATION	COMMENTS
002-033001	Jim's One Stop - 29 Main	Service
061-210001	Rushmore 66 - 1302 8th Street	Service
044-585001	St. Patrick 66 - St. Patrick & Hawthorne	No Service
004-284502	Rush Lube - 215 Omaha	Service
061-375002	Rushmore Standard - 1818 8th Street	Service
100-165002	South Canyon Standard - 3334 W. Main	Service
044-720001	Vern's Standard - St. Patrick & Highway 79	Service
100-090002	Ron Robin Sinclair - Jackson Blvd.	Service
061-025001	Kreb's Service - Mt. Rushmore Road	Service

TOTAL RESTAURANTS, CLASS II INDUSTRIES, AND SERVICE STATIONS $9137.77

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APPENDIX C

LEGAL AUTHORITY SUPPLEMENTS

APPENDIX C

LEGAL AUTHORITY SUPPLEMENTS

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Exhibit I   City Attorney's Statement

C-1

CITY OF RAPID CITY
SOUTH DAKOTA 57701
In the Beautiful Black Hills

OFFICE OF CITY ATTORNEY
City of Rapid City
22 MAIN STREET
RAPID CITY, SOUTH DAKOTA 57701
TELEPHONE: AC 605-394-4140

February 26, 1982

Regional Administrator
U.S. Environmental Protection
Agency
Region 8
1860 Lincoln Street
Denver, Colorado 80203

Gentlemen:

Pursuant the requirements of 40 C.F.R. 403 regarding legal authority for Rapid City, South Dakota, to implement its wastewater pretreatment program, the following statement is submitted:

It is my opinion that Rapid City, South Dakota, has authority to implement the program described in 40 C.R.F. 403.8 based on authority granted to municipalities by statute, SDCL Sections 9-48-2 and 9-32-9, which give municipalities the power to construct, maintain, and regulate sewer systems.

The following references to the Revised Ordinances of the City of Rapid City are correlated with the specific requirements listed in Section 403.8 (f) (1). Where the authority is not apparent from the provision cited, an explanation is provided.

403.8 (f) (1) (i) - Sections 30-165 and 30-166.

403.8 (f) (1) (ii) - General prohibitions against discharges which interfere or pass through the sewage treatment plant are contained in Section 30-163, first paragraph, and the definition of "interference", Section 30-1. The specific prohibitions of 40 C.F.R. 403.5 are contained in Section 30-163, paragraphs (a), (c), (d), and (e). Local limits set to assist in implementing the general and specific prohibitions are contained in Section 30-163(b). Section 30-174 makes the National Categorical Pretreatment Standards applicable when more stringent than the limitations contained in the ordinance.

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403.8 (f) (1) (iii) - Contributions to the sewage treatment plant from the industrial users located beyond the Rapid City municipal limits will be controlled by each local municipality in accordance with provisions in a contract between the Sanitary District and Rapid City. Each contributing Sanitary District is required by a standard contractual provision to adopt and enforce a local sewer use ordinance or regulation which complies with the requirements promulgated by the U.S. Environmental Protection Agency. Thus each contributing Sanitary District or municipality must essentially institute a pretreatment program within its own jurisdiction.

403.8 (f) (1) (iv) (A) - The Director has the authority to place industrial users on compliance schedules under Section 30-174, making the compliance schedule a Pretreatment Permit condition under Section 30-166. The Director may require the user to develop the schedule itself as part of one of the reports required under Section 30-171 (d).

403.8 (f) (i) (iv) (B) - Section 30-171.

403.8 (f) (1) (v) - Section 30-231.

403.8 (f) (vi) (A) - The Director may seek injunctive relief and any other appropriate relief under authority contained in Section 30-244. A criminal penalty of up to one hundred dollars ($100.00) and thirty (30) days imprisonment for each day of violation is available under Sections 30-242 and 1-10. This is the maximum penalty a municipality may impose under state law (SDCL 9-19-3).

403.8 (f) (1) (vi) (B) - The Director, under Section 30-244, may petition the appropriate court for a temporary restraining order to immediately and effectively halt harmful discharges to the sewer system. A restraining order can be obtained and enforced within a very short time. Under common law nuisance theory, a restraining order is also available to halt harmful discharge originating beyond the municipal limits of Rapid City.

403.8 (f) (1) (vii) - Section 30-234.

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As indicated above, Rapid City intends to utilize a permit system to implement pretreatment program requirements within its jurisdiction, and contracts with contributing Sanitary Districts and municipalities to ensure that requirements are implemented in those areas. The program procedures to be used in Rapid City and contributing sanitary districts and municipalities are fully explained in the "Program Description".

Rapid City intends to ensure compliance with pretreatment standards and requirements through an inspection, monitoring, and non-compliance enforcement program authorized under Section 30-231 of the ordinance, which would allow for the determination of non-compliance with discharge limitations and requirements independent of information supplied by the industrial user.

Those violating permit conditions may be issued an order to comply (Section 30-241) or have their permit revoked (Section 30-166 (j)). Significant Industrial Users are not allowed to discharge without a permit (Section 30-166 (a)). Rapid City will petition the appropriate court to enforce compliance.

If pretreatment program requirements are not implemented by contributing sanitary districts and municipalities, Rapid City can bring suit for specific performance of any Sewer Service Agreement provision which may be violated (SDCL 21-9). The City can bring suit to restrain or enjoin any particular activity that is causing problems (SDCL 21-8), and if a particular industry is involved, it can be joined as party to the action and bound by an injunction or temporary restraining order.

Sincerely,

Michael G. Diedrich

Michael G. Diedrich
Assistant City Attorney
City of Rapid City, S.D.

MGD:mpk

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Exhibit II   Program Endorsement by the Common Council

A RESOLUTION ENDORSING THE IMPLEMENTATION OF A WASTEWATER PRETREATMENT PROGRAM FOR THE PUBLICLY OWNED TREATMENT WORKS OF RAPID CITY, SOUTH DAKOTA.

WHEREAS the City of Rapid City has the duty and desire to protect the public health, safety, and welfare; and

WHEREAS the City of Rapid City has the authority to implement uniform requirements for Dischargers into the wastewater collection and treatment systems in accordance with all applicable State and Federal laws relating thereto; and

WHEREAS the City of Rapid City determines the need to prevent the introduction of pollutants into the wastewater treatment system which will interfere with the operation of the system or contaminate the resulting sludge; and

WHEREAS the City of Rapid City determines the need to prevent the introduction of pollutants into the wastewater system which will pass through the system, inadequately treated into receiving waters or the atmosphere or otherwise be incompatable with the system; and

WHEREAS the City of Rapid City desires to improve the opportunity to recycle and reclaim wastewaters and sludges from the system; and

WHEREAS the City of Rapid City desires to provide for equitable distribution among users of the cost of the Publicly Owned Pretreatment Works wastewater system;

NOW, THEREFORE, BE IT RESOLVED that the City of Rapid City endorses the implementation of a wastewater pretreatment program in accordance with all applicable State and Federal laws required by The Federal Water Pollution Control Act (FWPCA, P.L. 92-500), as amended by The Clean Water Act of 1977, P.L. 95-217, and the general Pretreatment Regulations (40 CFR, Part 403).

Dated this 19th day of July, 1982.

THE COMMON COUNCIL

Mayor

ATTEST:

Finance Officer

(SEAL)

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Exhibit III Rapid City Code, Chapter 30

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CHAPTER 30

WATER, SEWERS AND SEWAGE DISPOSAL

Art. I. In General, §§ 30-1--30-12
Art. II. Waterworks, §§ 30-13--30-112
    Div. 1. Generally, §§ 30-13--30-43
    Div. 2. Service Lines, §§ 30-44--30-60
    Div. 3. Meters, §§ 30-61--30-79
    Div. 4. Service Charges, §§30-80--30-112
Art. III. Sewage Works, §§ 30-113--30-257
    Div. 1. Use of Public Sewers Required, §§ 30-113--30-126
    Div. 2. Building Sewers and Connections, §§ 30-127--30-160
    Div. 3. Use of Public Sewers, §§ 30-161--3-180
    Div. 4. Special Sewers, §§ 30-181--30-190
    Div. 5. Connections Outside City, §§ 30-191--30-195
    Div. 6. Service Charges, §§ 30-196--30-221
    Div. 7. Fund Handling, §§ 30-222--30-225
    Div. 8. Protection from Damage, §§ 30-226--30-230
    Div. 9. Powers and Authority of Inspectors, §§ 30-231--30-240
    Div. 10. Penalties, §§ 30-241--30-250
    Div. 11. Validity, §§ 30-251--30-255
    Div. 12. In Force, §§ 30-256, 30-257
Appendix A to Chapter 30

ARTICLE I. IN GENERAL†

Sec. 30-1. Definitions.

The following words, terms and phrases are hereby defined and shall be interpreted as such throughout this chapter. Terms not herein defined shall have the meaning customarily assigned to them:

Approving authority shall mean the director of public works of the City of Rapid City or his duly authorized deputy, agent or representative.

BOD (biochemical oxygen demand) shall mean the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five (5) days at twenty (20) degrees Celsius expressed in milligrams per liter.

Building drain shall mean that part of the lowest horizontal piping of a drainage system which receives the discharge from soil, waste, and other drainage pipes inside the walls of the building and conveys it to the building sewer.

Building sewer (also house connection or service sewer) shall mean the extension from the building drain to the public sewer or other place of disposal.

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City shall mean the City of Rapid City, a municipal corporation of the State of South Dakota.

Clean Water Act shall mean the Federal Water Pollution Control Act, Public Law 92-500, also known as the Clean Water Act, including the amendments made by the Clean Water Act of 1977, Public Law 95-217.

Combined sewer shall mean a sewer intended to receive both wastewater and storm or surface water.

Commercial or institutional users shall mean all nonresidential users which introduce only sanitary sewage or primarily segregated domestic wastes into a building sewer.

Director shall mean the director of public works of the City of Rapid City, or his authorized deputy, agent or representative.

Easement shall mean an acquired legal right for the specific use of land owned by others.

Floating oil shall mean oil, fat, or grease in a physical state such that it will separate by gravity from wastewater by treatment in an approved pretreatment facility. A wastewater shall be considered free of floatable oil if it is properly pretreated and the wastewater does not interfere with the wastewater facilities.

Garbage shall mean the putrecible animal and vegetable waste resulting from the handling, preparation, cooking, and serving of foods.

Industrial cost recovery shall mean recovery by the City of Rapid City from the industrial users of the Rapid City Wastewater Treatment System of the amount of federal grant money used for the purpose of constructing wastewater facilities allocable to the transportation and treatment of waste from such users.

Industrial cost recovery period shall mean a period of thirty (30) years starting at the time of receipt of federal grant money used for the purpose of constructing wastewater facilities during which the grant allocable to the treatment of waste from industrial users is recovered from the industrial users of such facilities.

Industrial User shall mean any nondomestic source regulated under section 307(b), (c) or (d) of the Clean Water Act that introduces pollutants into the City's wastewater treatment works.

Interference shall mean inhibition or disruption of the Sewage Works, treatment process, or operations which cause or significantly contribute to the violation of the requirements of other agencies having jurisdiction over discharges to the receiving waters. This term also includes contamination of municipal sludge.

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Industrial waste shall mean the water-carried wastes from industrial manufacturing or industrial processing as distinct from sanitary sewage. It shall include the trade wastes produced by, but not limited to, food processing and bottling plants, food manufacturing plants, slaughtering plants, tallow works, plating works, disposal services, industrial cleaning plants, fertilizer plants, car and truck washing operations, laundries, cleaning establishments, cooling plants, industrial plants, factories and chemical treatment installations.

Letter of intent shall mean notification from an industrial user to the City of Rapid City of that user's intent to utilize a publicly owned treatment facility for a given period of time.

Natural outlet shall mean any outlet, including storm sewers and combined sewer overflows, into a watercourse, pond, ditch, lake or other body of surface or groundwater.

May is permissive. (See "Shall").

Minor industrial users shall mean an industrial user not classified as a significant industrial user.

National Categorical Pretreatment Standard or Pretreatment Standard shall mean any regulation containing pollutant discharge limits promulgated by the EPA in accordance with Section 307(b) and (c) of the Act (33 U.S.C. 1347) which applies to a specific category of Industrial users.

National Prohibitive Discharge Standard or Prohibitive Discharge Standard shall mean any regulation developed under the authority of Section 307(b) of the Act and the General Pretreatment Regulations (40 CFR 403.5).

Owner or occupant shall mean the persons using the lot, parcel of land, building or premises connected to and discharging sewage into the sewage system of the city, and who pays or is legally responsible for the payment of water rates or charges made against the said lot, parcel of land, building or premises, if connected to the sewage system, or who would pay or be legally responsible for such payments.

Person shall mean any individual, firm, company, association, governmental agency, society, corporation, group or political subdivision.

pH shall mean the logarithm of the reciprocal of the weight of hydrogen ions in grams contained in one liter of solution.

Premises shall mean all the parcels or land included in the city in a single assessor's parcel number.

Primarily segregated domestic wastes shall mean that sewage which is introduced into a building sewer and which contains no more than fifty per cent (50%) industrial waste, prior to any intentional dilution.

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Properly shredded garbage shall mean the wastes from the preparation, cooking, and dispensing of food that have been shredded to such a degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle greater than one-half (1/2) inch (one and twenty-seven hundredths (1.27) centimeters) in any dimension.

Public sewer shall mean a sewer in publicly owned land or easements and controlled by the City of Rapid City.

Reserve capacity shall mean the unused portion of the Rapid City Wastewater Treatment Plant capacity that has or will be formally set aside for use by a specific industry, and is so identified by a formal, binding agreement. The reserve capacity shall be subject to industrial cost recovery.

Sanitary sewage shall mean the water-carried wastes from residences, hotels, restaurants, eating houses, or from business establishments or premises engaged solely in the sale, storage or repair of goods, wares or merchandise, and which contains garbage, human wastes, or animal wastes.

Sanitary sewer shall mean a sewer which carries sanitary sewage and to which storm, surface and groundwaters are not intentionally admitted.

Sewage: See "Wastewater".

Sewage Treatment Plant (also wastewater facilities) shall mean all facilities for collecting, pumping, transporting, treating and disposing of sewage.

Sewer shall mean a pipe or conduit for carrying sewage.

Sewer use charge shall mean a monthly charge to all users of the wastewater facilities which is based on sewage volume, strength and/or flow.

Shall is mandatory. (See "May").

Significant Industrial User shall mean any user of the City's wastewater disposal system who (i) is subject to National Categorical Pretreatment Standards, (ii) has in its wastes toxic pollutants as defined by Section 307 of the Clean Water Act, or (iii) is found by the City, State, or EPA to have significant impact, either singly or in combination with other contributing industries, on the wastewater collection or treatment system, the quality of sludge, the system's effluent quality, or air emissions generated by the system.

Slug shall mean any discharge of water, sewage, or industrial waste in which concentration of any given constituents or in which quality of flows exceed for any period of duration longer than fifteen (15) minutes more than five (5) times the average twenty-four-hour concentration or flow during normal operation.

Special sewer shall mean any sewer or storm drain constructed under the authority of the City of Rapid City the cost of which was not directly assessed to or borne by the abutting property and which has been or may hereafter be designated as such "special sewer" by resolution of the council.

State shall mean the State of South Dakota.

Storm drain (also storm sewer) shall mean a sewer which carries storm and surface waters and drainage, but which excludes sewage and industrial wastes other than uncontaminated cooling water.

Suspended solids (SS) shall mean total suspended matter that either floats on the surface of, or is in suspension in water, wastewater, or other liquids, and that is removable by laboratory filtering as prescribed in "Standard Methods for the Examination of Water and Wastewater" and referred to as nonfilterable residue.

Unpolluted water shall mean water of quality equal to or better than the effluent criteria in effect or water that would not cause violation of receiving water quality standards and would not be benefited by discharge to the sanitary sewers and wastewater treatment fcilities provided.

Wastewater (also sewage) shall mean the spent water of a community. From the standpoint of source, it may be a combination of the liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions, together with any groundwater, surface water, and stormwater that may be present.

Wastewater facilities: See "Sewage Works".

Wastewater superintendent shall mean the superintendent of the wastewater system of the City of Rapid City or his authorized deputy, agent or representative.

Wastewater treatment works: See "Sewage Treatment Plant".

Water superintendent shall mean the superintendent of the water system of the City of Rapid City or his authorized deputy, agent or representative.

Watercourse shall mean a natural or artificial channel for the passage of water either continuously or intermittently.
(Ord. No. 1496, 1-21-75; Ord. No. 1895, 9-17-79)

Sec. 30-2--30-12. Reserved.

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ARTICLE III. SEWAGE WORKS*

DIVISION 1. USE OF PUBLIC SEWERS REQUIRED

Sec. 30-113. When connection required.

The owner of any house or building occupied or used by any person and located so that any part of such house or building is within two hundred (200) feet of a public sewer, shall, within thirty (30) days from the time of receiving from the city a written notice to do so, connect such a house or building to a public sewer. (Ord. No. 1496, 1-21-75)

Sec. 30-114. Unsanitary disposal of waste prohibited.

It shall be unlawful for any person to place, deposit or permit in any unsanitary manner on public or private property within the City of Rapid City or in any area under the jurisdiction of said City of Rapid City any human or animal excrement or garbage. (Ord. No. 1496, 1-21-75)

Sec. 30-115. Disposal of sewage to storm sewers or natural outlet prohibited.

It shall be unlawful to discharge to any natural outlet within the City of Rapid City or in any area under the jurisdiction of said City of Rapid City any sewage or other polluted waters except where suitable treatment has been provided in accordance with subsequent provisions of this article. (Ord. No. 1496, 1-21-75)

Sec. 30-116. Septic tanks, etc., prohibited.

Except as provided in the plumbing code of the City of Rapid City currently in effect, it shall be unlawful to construct or maintain any privy, privy vault, septic tank, cesspool or other facility intended for use for the disposal of sewage. (Ord. No. 1496, 1-21-75)

Sec. 30-117. Plumbing code applicable to private sewage systems.

All private sewage disposal systems shall conform with the City of Rapid City Plumbing Code currently in effect and with the law of the state. (Ord. No. 1496, 1-21-75)

Sec. 30-118--30-126. Reserved.

DIVISION 2. BUILDING SEWERS AND CONNECTIONS

Sec. 30-127. Unauthorized manhole opening, connections or use.

No person except city employees or contractors directly employed by the city who are authorized to do so by the director shall uncover, make any connection with or opening into, use, alter or disturb any public sewer or appurtenances thereof without first obtaining a written permit from the director. (Ord. No. 1496, 1-21-75)

Sec. 30-128. Permit for sewer connection required.

A building sewer permit shall be obtained before installing building sewer or connecting one to the public sewer. (Ord. No. 1496, 1-21-75)

Sec. 30-129. Class of building sewer permits.

There shall be two (2) classes of building sewer permits. One class shall be for residential, commercial, minor industrial, and institutional service, and the other shall be for service to establishments producing major industrial wastes. (Ord. No. 1496, 1-21-75)

Sec. 30-130. Application forms for sewer permits.

The owner or his agent shall make application for a building sewer permit on a form furnished by the City of Rapid City. This form may be combined with forms for other permits required by the city. The permit application shall be supplemented by the plans, specifications or other information considered pertinent in the judgment of the director. Approval of the application shall be contingent upon payment of connection permit fees to the City of Rapid City. (Ord. No. 1496, 1-21-75)

Sec. 30-131. Owner responsible for costs.

All costs and expenses incident to the installation, connection and maintenance of the building sewer shall be borne by the owner. The owner shall indemnify the City of Rapid City from any loss or damage that may directly or indirectly be occasioned by the installation of the building sewer. (Ord. No. 1406, 1-21-75)

Sec. 30-132. Building sewer required for each lot.

A separate and independent building sewer shall be provided for every lot except that joint use of building sewers may be permitted at the discretion of the director for developments (such as condominiums) where provisions have been made for joint maintenance by all owners served. (Ord. No. 1496, 1-21-75)

Sec. 30-133. Existing building sewers.

Old building sewers may be used in connection with new buildings only when they are found on examination and testing by the director to meet all requirements of this article. (Ord. No. 1496, 1-21-75)

Sec. 30-134. Reserved

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Sec. 30-135. Building sewer elevation.

Whenever possible the building sewer shall be brought to the building at an elevation below the basement floor. In all buildings in which any building drain is less than thirty (30) inches higher than the invert of the public sewer, sanitary sewage carried by such building drain shall be lifted by an approved means and discharged to the building sewer, or the building drain shall include a check valve maintained by the owner. (Ord. No. 1496, 1-21-75)

Sec. 30-136. Surface runoff prohibited in sewer.

No person shall make connection of roof down spouts, foundation drains, areaway drains, storm drainage, or other sources of surface runoff or groundwater to a building sewer or building drain which in turn is connected directly or indirectly to the public sanitary sewer or industrial waste sewer. (Ord. No. 1496, 1-21-75)

Sec. 30-137. Inspection of building sewer construction.

The applicant for the building sewer permit shall notify the director when the building sewer is ready for inspection and connection to the public sewer. The connection shall be made during the presence and under the inspection of the director or his representative. (Ord. No. 1496, 1-21-75)

Sec. 30-138. Reserved.

Sec. 30-139. Protective devices required.

All excavations for building sewer installations shall be adequately guarded with barricades and lights so as to protect the public from hazard. The permittee shall agree to assume responsibility for any public liability or property damage which may result from the work. Streets, sidewalks, parkways, or other public property disturbed in the course of the work shall be restored in accordance with the design standards and standard specifications currently in effect. Permits for building sewers shall also be considered as encroachment permits as required in other sections of the City Code. (Ord. No. 1496, 1-21-75)

Sec. 30-140. Maximum size tap on six-inch line.

No tap larger than four (4) inches shall be made on a six (6) inch sewer line. (Ord. No. 1496, 1-21-75)

Sec. 30-141. Manhole connections.

Any sewer connection larger than six (6) inches must be made by means of a manhole. If a six (6) inch connection is needed on a six (6) inch sewerline, such connection must be made by means of a manhole. All manholes must be constructed to city specifications as required on new sewer lateral construction. (Ord. No. 1496, 1-21-75)

Secs. 30-142--30-144. Reserved.

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Secs. 30-145--30-160. Reserved

DIVISION 3. USE OF PUBLIC SEWERS

Sec. 30-161. Clean water prohibited from sanitary sewer.

No person shall discharge or cause to be discharged any storm water, surface water, groundwater or uncontaminated industrial process water to any sewer, except as allowed elsewhere in this article. (Ord. No. 1496, 1-21-75)

Sec. 30-161. Storm water disposal

Storm water and all other unpolluted drainage shall be discharged to such sewers as are specifically designated as storm sewers by the director. Industrial cooling water or uncontaminated process waters may be discharged on written approval of the director to a storm sewer or natural outlet. (Ord. No. 1496, 1-21-75)

Sec. 30-163. Materials prohibited in sewers.

No person shall discharge or cause to be discharged to any public sewer any materials which may cause interference with the operation or performance of the treatment works, or which may pass through such treatment works so as to cause the treatment works to violate terms of its discharge permit or provisions of Federal, State or local laws. No person shall discharge or cause to be discharged any of the following described waters or wastes to any public sewers:

(a) Any gasoline, benzene, naptha, fuel, oil, or other flammable or explosive liquid, solid or gas. Any liquid or vapor having a temperature higher than 150 degrees Fahrenheit (65 degrees Celsius). Any liquid or vapor that causes the wastewater entering the Sewage Treatment Plant to exceed 104 degrees Fahrenheit (40 degrees Celsius). The Prohibitive Discharge Standard for these substances is zero discharge under all circumstances.

(b) Any waters or wastes containing toxic or poisonous solids, liquors gasses in sufficient quantity (either singly or in interaction with other wastes), to contaminate the sludge of any municipal system, to injure or interfere with any sewage treatment process, constitute a hazard to humans or animals, create a public nuisance, or create any hazard in the receiving waters of the waste water treatment plant; including, but not limited to the following:

Pollutant	mg/l Concentration
Copper (Cu)	0.5
Zinc (Zn)	0.5
Chromium (Hexavalent)	2.0
Chromium (Trivalent)	2.0

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Pollutant	mg/l Concentration
Total Chromium	5.0
Nickel (Ni)	0.5
Lead (Pb)	0.1
Boron (B)	1.0
Cadmium (Cd)	0.02
Silver (S)	0.03

Where an Industrial User is subject to Categorical Pretreatment Standard(s) that control pollutants not enumerated above, or contain limitations that are more stringent than indicated above, the Industrial User is subject to the requirements of the Categorical Pretreatment Standard(s). Under no circumstances shall the Industrial User achieve compliance with the above limitations or Categorical Pretreatment Standards by diluting its Industrial Waste with tap water, unpolluted water, sanitary sewage, or any other liquid dilutent.

(c) Any waters or wastes having a pH lower than 5.0 or having any other corrosive property capable of causing damage or hazard to structures, equipment, or personnel of the sewage works.

(d) Solid or viscous substances in quantities or of such size capable of causing obstruction to the flow in sewers or other interference with the proper operation of the sewage works, such as, but not limited to, ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, unground garbage, whole blood, paunch manure, hair and fleshings, entrails, and whole or ground paper, dishes, cups, milk containers, etc.

(e) Any pollutant, including oxygen demanding pollutants (BOD, COD, etc.) released in a discharge to a Sewage Treatment Plant in such strength or volume which the Industrial User knows or has reason to know will cause interference in the Sewage Treatment Plant. (Ord. No. 1496, 1-21-75; Ord No. 1895, 9-17-79; Ord. No. 1947, 10-16-80; Ord. No. 2095, 1-1-82)

Sec. 30-164. Materials director may prohibit in sewers.

No person shall discharge or cause to be discharged into any sewer the following described substances, materials, waters or wastes if it appears likely in the opinion of the director that such wastes can harm the sewers wastewater treatment plant processes or equipment, have an adverse effect on the receiving stream; or can otherwise endanger life, limb, public property or constitute a nuisance. In forming his opinion as to the acceptability of these waters, the director will give consideration to such factors as the qualities of subject wastes in relation to flows and velocities in the sewers, materials of construction of the sewers, nature of the sewage treatment process, capacity of the wastewater treatment plant,

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degree of treatability of wastes in the wastewater treatment plant, and other pertinent factors. In all cases the Director shall require compliance by the Industrial User with all aspects of applicaable Categorical Pretreatment Standards. The substances prohibited are:

(a) Any liquid or vapor having temperature higher than one hundred four (104) degrees Fahrenheit (forty (40) degrees Celcius).

(b) Any water or wastes containing fats, wax, grease, or oils whether emulsified or not, in excess of one hundred (100) mg/l or containing substances which may solidify or become viscous at temperatures between thirty-two (32) degrees and one hundred fifty (150) degrees Fahrenheit (zero (0) and sixty-five (65) degrees Celsius).

(c) Any garbage that has not been properly shredded. The installation and operation of any garbage grinder equipped with a motor of three-fourths (3/4) hp (seventy-six hundredths (0.76) hp metric) or greater shall be subject to the review and approval of the director.

(d) Any waters or wastes containing strong acid, iron pickling wastes, or concentrated plating solutions whether neutralized or not.

(e) Any waters or wastes containing iron, chromium, copper, zinc, and similar objectionable or toxic substances; or wastes exerting an excessive chlorine requirement, to such degree that any such material received in the composite wastewater at the wastewater treatment plant exceeds the limits established by the director for such materials.

(f) Any waters or wastes containing phenols or other taste or odor-producing substances in such concentrations exceeding limits which may be established by the director.

(g) Any radioactive wastes or isotopes of such half-life or concentration as may exceed limits established by the director in compliance with applicable state or federal regulations.

(h) Any waters or wastes having pH in excess of nine and five-tenths. (9.5).

(i) Waste discharges which exert or cause:

  (1) Unusual concentrations of suspended solids (such as, but not limited to, fullers earth, lime slurries, and lime residues and organic materials) or of dissolved solids (such as, but not limited to starch, sugar, sodium chloride and sodium sulfate).

  (2) Excessive discoloration (such as, but not limited to, dye wastes and vegetable tanning solutions).

  (3) Unusual BOD, chemical oxygen demand, or chlorine requirements in such quantities as to constitute a significant load on the sewage treatment works.

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(4) Unusual flows or concentrations of wastes constituting "slugs" as defined herein.

(j) Waters or wastes containing substances which are not amenable to treatment process employed, or are amenable to treatment only to such degree that the wastewater treatment plant effluent cannot meet the requirements of other agencies having jurisdiction over discharge to the receiving waters. (Ord. No. 1496, 1-21-75; Ord. No. 2095, 1-1-82)

Sec. 30-165. Action resulting from deposit of deleterious wastes.

If any waters or wastes are discharge to the public sewers, which waters contain the substances or possess the characteristics enumerated in section 30-163 or 30-164 of this article, and which in the judgment of the director may have a deleterious effect upon the wastewater facilities, processes, equipment, or receiving waters, or which otherwise create a hazard to life or constitute a public nuisance, the director may:

(a) Reject the wastes.

(b) Require pretreatment to an acceptable condition for discharge to the public sewer.

(c) Require control over the quantities and rates of discharge.

(d) Require payment to cover the added cost of handling and treating the wastes not covered by existing charges under any other provisions of this article. (Ord. No. 1496, 1-21-75)

Sec. 30-166. Industrial Waste Permit.

(a) No Significant Industrial User shall discharge wastewater to the public sewers without having a valid Industrial Waste Permit issued by the Director. A permit may be required for any Industrial User as deemed necessary by the Director.

(b) Industrial Users shall comply fully with the terms of their permits in addition to the provisions of this chapter. Violation of a permit condition is deemed a violation of this chapter.

(c) All Significant Industrial Users shall apply for an Industrial Waste Permit within thirty (30) days after the effective date of this provision. Other persons proposing to connect to the sewer system and determined by the Director as requiring an Industrial Waste Permit shall apply at least ninety (90) days prior to commencing discharges to the public sewer. All permittees shall reapply for a new permit between 90 and 180 days prior to the expiration of the old permit.

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(d) All applications shall be in the form prescribed by the Director. The application shall submit, in units and terms suitable for evaluation, all information requested in the application form, and any relevant supplemental information requested by the Director.

(e) An applicant or permittee shall notify the Director of any new or increased contribution of pollutants or changes in the nature of pollutants not indicated in the permit application.

(f) Industrial Waste Permits shall include, but not be limited to, the following terms:

(1) Prohibitions on discharge of certain materials, determined by the Director pursuant to Section 30-164.

(2) Notice of the general and specific prohibitions required by Section 30-163.

(3) Notice of applicable National Categorical Pretreatment Standards, effective under Section 30-174.

(4) Requirements for installation of treatment technology necessary to achieve compliance with the requirements of this Chapter including, but not limited to, that which may be required by the Director pursuant to Sections 30-165, 30-167, and 30-168. (The design and installation of such technology shall be subject to the review, inspection, and approval of the Director, and is also subject to the requirements of all applicable codes, ordinances, and laws).

(5) Compliance schedules as per Section 30-174.

(6) Monitoring, sampling, record keeping, reporting, notice, control manhole, and measuring requirements specified under Sections 30-170 and 30-171.

(7) Special requirements regarding unusual strength sewage as per agreement authorized by Section 30-173.

(8) Requirements for additional payments as per Section 30-165(d).

(9) Other conditions necessary to carry out the requirements of this division and applicable Federal and State laws and regulations.

(g) Permits are valid for five (5) years from date of issuance or permit modification, whichever is later, unless revoked.

(h) Permits are not transferrable.

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(i) Permits may be modified for just cause upon thirty (30) days notice. Just cause shall include, but not be limited to:

(1) Promulgation of a new applicable National Categorical Pretreatment Standard;

(2) Changes in the requirements of this ordinance.

(3) Changes in processes used by the permittee or changes in discharge volume or character;

(4) Changes in design or capability of receiving sewage treatment plant.

(j) Permits may be revoked for just cause including, but not limited to, violation of any terms or conditions of the Industrial Waste Permit, or any other violation of this ordinance; obtaining a permit by misrepresentation or failure to disclose fully all relevant facts; and false statements in any required report. (Ord. No. 2095, 1-1-82)

Sec. 30-167. Interceptors and dilution tanks.

The following regulations shall govern admission of industrial wastes to the sewage works:

(1) Grease, oil and sand interceptors and dilution tanks shall be provided when in the opinion of the director, they are necessary for the proper handling of liquid wastes containing grease in excessive amounts or any flammable wastes, sand and other harmful ingredients, except that such interceptors or tanks shall not be required for private living quarters or dwelling units.

(2) All interceptors shall be of a type and capacity approved by the director and shall located under cover and so as to be readily and easily accessible for cleaning and inspection. Interceptors shall not be located so as to receive rainwater or unpolluted runoff.

(3) Grease and oil interceptors shall be constructed of impervious materials capable of withstanding abrupt and extreme changes in temperature. They shall be of substantial construction, watertight and equipped with easily removable covers which, when bolted in place, shall be gastight and watertight.

(4) Where installed, all grease, oil and sand interceptors shall be maintained by the owner, at his expense, in continuously efficient operation at all times. Interceptors shall be cleaned at least once a week.

(5) Failure by the owner to properly clean and maintain these units shall be considered sufficient cause for disconnection of premises from the public sewer, or punitive actions as provided for in this article. (Ord. No. 1496, 1-21-75)

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Sec. 30-168. Screens required.

In plants processing fruits, vegetables and similar produce, screens shall be provided when, in the opinion of the director, they are necessary to reduce the concentration of industrial wastes to acceptable levels. Screens shall be of a type and capacity approved by the director and shall be located so as to be readily and easily accessible for cleaning and inspection. Failure by the owner to properly clean and maintain these units shall be considered sufficient cause for disconnection of premises from the public sewer, or punitive actions as provided for in this article. (Ord. No. 1946, 1-21-75)

Sec. 30-169. Pretreatment facilities maintained by owner.

Where preliminary treatment or flow-equalizing facilities are provided for any waters or wastes, they shall be maintained continuously in satisfactory and effective operation by the owner at his expense. (Ord. No. 1496, 1-21-75)

Sec. 30-170. Control manholes.

When required by the director, the owner of any property served by a building sewer carrying industrial wastes shall install a suitable control manhole on the building sewer to facilitate observation and sampling of the wastes. Such manhole, when required, shall be accessible and safely located and shall be constructed in accordance with plans approved by the director. The manhole shall be installed by the owner at his expense and shall be maintained by him so as to be safe and accessible at all times. (Ord. No. 1496, 1-21-75)

Sec. 30-171. Monitoring, Sampling, Record-keeping, Reporting, Notice, Control Manhole, and Flow Measure Requirements.

(a) Industrial Users may be required, at their own expense, to install, calibrate, use, and maintain monitoring equipment or methods necessary to determine compliance with Pretreatment Standards and requirements as specified by the Director.

(b) Industrial Users subject to National Categorical Pretreatment Standards shall be required, and all other Industrial Users may be required, to take samples of effluents in accordance with specified methods at such locations, at such intervals, and in such a manner as may be prescribed by the Director, which are necessary to determine compliance with Pretratment Standards and requirements.

(c) Industrial Users subject to National Categorical Pretreatment Standards shall be required, and all other Industrial Users may be required, to keep records as described in 40 CFR 403.12 (n).

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(d) Industrial Users subject to National Categorical Pretreatment Standards shall be required and all other Industrial Users may be required, to submit to the Director the reports described in 40 CFR 403.12 (b), baseline report; 403.12 (c) (3), compliance schedule progress reports; 403.12 (e), periodic reports on continued compliance. Industrial Users shall also comply with any additional requirements specified in an applicable National Categorial Pretreatment Standard, or elsewhere in 40 CFR 403.12.

(e) Industrial Users shall notify the Director immediately of any slug loading as required by 40 CFR 403.12 (f).

(f) The Director may require an Industrial User to install at its own expense a suitable control manhole to facilitate observation and sampling of industrial waste. Such manhole and any monitoring or measuring devices required under paragraphs (a) or (g) of this section shall be accessable and safely located and shall be constructed in accordance with plans approved by the Director. They shall be of such design and construction as to prevent infiltration by ground and surface waters, or introduction of slugs or solids to the sewer. The installation of screens with a maximum opening of one inch, but of sufficient fineness to prevent the entrance of objectionable slugs of solids to the sewer, may be required. The facilities shall be so maintained by the person discharging industrial waste that any authorized representative, or employee of the city may readily and safely measure the volume or obtain samples of the flow at all times.

(g) If not already required by this section, the Director may require any Industrial User to install, at the owners expense, a suitable device for continuously recording the flow discharged to the city's sewer. The measuring device may be installed on the source of the water to the industrial plant if that quantity is to be used as the measurement for the sewage produced. If sufficient evidence is presented to the Director that not all water used reaches the sewer, an estimate will be made by the Director of the proper amount to be deducted to compute the sewage flow. (Ord. No 2095, 1-1-82)

Sec. 30-172. Testing and sampling procedures.

All measurements, tests and analyses of the characteristics of waters and wastes to which reference is made in this article shall be determined in accordance with the latest edition of "Standard Methods of the Examination of Water and Wastewater," published by the American Public Health Association, and shall be determined at the control manhole provided, or upon suitable samples taken at said control manhole. In the event that no special manhole has been required, the control manhole shall be considered to be the nearest downstream manhole in the public sewer to the point at which the building sewer is connected. Sampling shall be carried

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out by customarily-accepted methods to reflect the effect of constituents upon the sewage works and to determine the existence of hazards to life, limb and property. (Ord. No. 1496, 1-21-75)

Sec. 30-173. Special agreements for unusual strength sewage.

No statement contained in this article shall be construed as preventing any special agreement or arrangement between the city and industrial user whereby an industrial waste of unusual strength, concentration or character may be accepted by the city for treatment; subject to payment by the industrial user of agreed additional charges. (Ord. No. 1496, 1-21-75)

Sec. 30-174. Authority to require compliance with Federal Categorical Pretreatment Standards.

Upon promulgation of the Federal Categorical Pretreatment Standards (authorized by Section 307 of the Clean Water Act) for a particular industrial subcategory, the Federal Standard, if more stringent than the limitations imposed under this Ordinance, or in the absence of the applicable pretreatment limitations in this Ordinance, shall become applicable. The director shall promptly notify all affected Industrial Users of the reporting requirements contained in 40 CFR 403.12 and shall require that such reports be signed by a duly authorized representative of the Industrial User who certifies as to the completeness of the report.

The director shall have the authority to place all affected Industrial Users on compliance schedules, receive and analyze reports on progress toward compliance, and insure that all applicable Industrial Users install the technology necessary to achieve the required levels of treatment specified by the Categorical Pretreatment Standard on or before the deadline specified in the Standard. This authority shall also be applicable to those Industrial Users who discharge substances identified as prohibited discharges. (Ord. No. 1947, 10-16-80)

Secs. 30-175--30-180. Reserved

DIVISION 4. SPECIAL SEWERS

Sec. 30-181. Designation of special sewer.

The city council may by resolution establish any public sewer (either sanitary sewer, storm drain, or combined sewer) as a special sewer provided that portions of the cost of said sewers were not directly assessed to or borne by the abutting properties. Such sewers may be within the boundaries of the city, within territory annexed to the city, or in areas outside the city. (Ord. No. 1496, 1-21-75)

Sec. 30-182. Permit required to connect.

It shall be unlawful for any person to connect any building sewer to any special sewer without a permit therefore having been first obtained from the director. (Ord No. 1496, 1-21-75)

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Sec. 30-183. Application; issuance; fee.

(a) Application. Before a connection may be made to a special sewer, a permit shall be secured from the director. Application for such permit shall be made by applicant on forms furnished by the city, giving such information as the director may require. This application and form shall be in addition to the standard connection permit required in section 30-128 of this article.

(b) Issuance. Upon such written application being made, the director may issue a permit to make such sewer connection upon payment of the fees provided in this article. Such permit may contain such conditions and requirements as the director may determine to be necessary for the protection of the city with respect to the special sewer and such sewer connection.

(c) Special sewer fee. Upon the issuance of such permit, the applicant shall pay a special sewer fee to the city at the rate established by the resolution of the council in establishing the special sewer. (Ord. No. 1496, 1-21-75)

Sec. 30-184. Establishment of fees.

The special sewer fee rate for each special sewer shall be determined and and established by the resolution of the city council which established the special sewer. The rate of such special sewer fee may be determined as follows:

(a) On a front foot basis,

(b) On a square foot basis for the property served,

(c) On a per connection basis,

(d) On a quantity or quality basis,

(e) On the basis of benefits to the property served, or

(f) On a combination of any one or more of such basis.

Nothing in this article shall change or affect any ordinances or regulations pertaining to inspection, permit fees, connection fees, or the actual construction of a special sewer connection presently constructed or authorized. (Ord. No. 1496, 1-21-75)

Secs. 30-185--30-190. Reserved.

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DIVISION 5. CONNECTIONS OUTSIDE CITY

Sec. 30-191. Approval required.

No sewer connection permit shall be issued after the effective date of this article to serve any property located outside the corporate limits of the City of Rapid City, except with specific approval of the city council. Such connections shall be authorized by resolution and shall be subject to such terms, conditions and fees as the council finds necessary or appropriate. (Ord. No. 1496, 1-21-75)

Secs. 30-192--30-195. Reserved.

DIVISION 6. SERVICE CHARGES

Sec. 30-196. Tap fees.

If it is necessary to tap a sewer at any place other than where a "Y" has been placed, the sewer department will make a tap after a regular sewer connection permit has been issued at the following fees:

(1) Four-inch tap, eighteen dollars ($18.00).

(2) Six-inch tap, twenty-two dollars ($22.00). (Ord. No. 1496, 1-21-75)

Sec. 30-197. Industrial Waste Permit Fees.

Each permittee shall pay an annual fee of seventy-five dollars ($75.00).

Sec. 30-198. Connection fees.

Every application for a connection permit, submitted in accordance with section 30-128, shall pay a fifteen dollar ($15.00) fee for each building sewer connection. (Ord. No. 1496, 1-21-75)

Sec. 30-199. Sewer use charge.

(a) Minimum rate and monthly charge.

(1) All sewage and industrial waste conveyed to the waste water facilities shall be paid for by the consumer or owner of the premises served, at the minimum rate of forty-nine cents ($0.49) per one hundred (100) cubic feet of sewage for service lines connected to city-owned mains and at the rate of ninety-eight cents ($0.98) per one hundred (100) cubic feet of sewage for service lines connected to city or private mains outside the city limits. The rate to be paid for sewer service through lines owned by a governmental entity other than the city shall be established by contract.

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(2) The minimum monthly charge shall be one dollar ($1.00) per sewer connection within the city and two dollars ($2.00) per sewer connection to privately owned mains outside the city limits.

(b) Rate determination. The methods used for determining the sewer use charge shall be as follows:

(1) Residential users. The account of sewage flow from residential connections shall be determined yearly from the metered water during the months of December, January and February as reflected in the January, February and March water billings. The average monthly use during December, January and February as reflected in the January, February and March water billings measured in one hundred's of cubic feet, shall be multiplied by the applicable rate and the product will determine the monthly sewer use charge for the twelve-month period commencing after April 1st for each year. New residential users or intermittent users shall pay a sewer use charge based on the average residential water use of eight hundred and sixty (860) cubic feet per month per dwelling unit served; this volume shall be used until the end of the next averaging period (December, January and February). For any of the three (3) averaging months in which the meter is not actually read, the amount of eight hundred sixty (860) cubic feet times the number of dwelling units shall be inserted for that month to determine the average for the three (3) months.

(2) Commercial and institutional users. The sewer use charge for commercial and institutional connections shall be determined by multiplying the monthly sewage volume in one hundred (100) cubic feet by the rate established by subsection (a) of this section per one hundred (100) cubic feet. The sewage volume shall be determined from the monthly metered water unless special allowances are made or the sewage is metered as provided herein.

(3) Industrial users. The sewer use charge for industrial connections shall be determined by multiplying the monthly sewage volume measured in one hundred (100) cubic feet, by the rate established by subsection (a) of this section per one hundred (100) cubic feet whenever the BOD concentration is less than two hundred fifty (250) mg/l and the suspended solids concentration is less than three hundred (300) mg/l, based on a twenty-four-hour flow proportioned, composite sample. Whenever the BOD concentration exceeds two hundred fifty (250) mg/l

or the suspended solids concentration exceeds three hundred (300) mg/l, based on a twenty-four-hour, flow-proportioned, composite sample, the sewage use charge rate shall be increased according to the following schedule:

24-Hour Composite Concentration (mg/l)	BOD Class	Suspended Solids Class	Surcharge ($/100 cubic feet)	
			BOD	Suspended Solids
0-- 250	I	A	0	0
250-- 300	II	B	.0075	0
300-- 350	III	C	.0150	.0075
350-- 400	IV	D	.0225	.0150
400-- 450	V	E	.0300	.0225
450-- 500	VI	F	.0375	.0300
500-- 550	VII	G	.0450	.0375
550-- 600	VIII	H	.0525	.0450
600-- 650	IX	J	.0600	.0525
650-- 700	X	K	.0675	.0600
700-- 750	XI	L	.0750	.0675
750-- 800	XII	M	.0825	.0750
800-- 850	XIII	N	.0900	.0825
850-- 900	XIV	O	.0975	.0900
900-- 950	XV	P	.1050	.0975
950--1000	XVI	Q	.1125	.1050
Greater than 1000	XVII	R	$0.0075 per each to increment	

The sewage volume shall be determined from the monthly metered water, including metered water from non-municipal sources, unless otherwise required by section 30-171 or unless special allowances are made or the sewage flow is metered as provided herein.

The surcharge provided by this subsection shall not become effective until the first water and sewer use charge billing by the City of Rapid City on or after the first day of April, 1976, such billing to include sewer use prior to such date within the monthly billing period.

(c) Special arrangements. Any commercial, industrial, and institutional water receiving metered water for uses resulting in portions of the water not going to the wastewater facilities may have its sewer use charge adjusted by showing, at the owner's expense, what percentage of the metered water is not received in the wastewater facilities. The maximum allowance for irrigation shall be an application rate of twenty-four (24) inches per year per square foot of area being irrigated.

(d) Monitoring. All significant industrial users shall, at their own expense, perform monitoring to determine their industrial classification rate. Any industrial users choosing to monitor its discharge may do so at their own expense.

(e) Exempt from monitoring. All minor industries shall be exempt from self-monitoring for the purposes of this subsection.

(f) Sewage volume measurement.

(1) Any commercial, institutional or industrial user may choose to measure the actual sewage flow in lieu of basing the sewage use charge on the metered water. In such cases, the conditions set forth herein shall apply.

(2) Any commercial, institutional or industrial user receiving nonmetered water shall either install water meters for all nonmetered sources or provide sewage flow measurement in accordance to the conditions set forth herein.

(3) All meters for nonmetered water sources and sewage flow measurement devices shall be installed in accordance with plans and specifications approved by the director. All costs for design and installation shall be borne by the owner. The owner shall guarantee the city access to the meter or meters for monthly meter reading.

(g) Review of each user's wastewater service charge. The city shall review the total annual cost of operation and maintenance as well as each user's wastewater contribution percentage not less often than once a year and revise the system as necessary to assure equity of the service charge system established herein and to assure that sufficient funds are obtained to adequately operate and maintain the wastewater treatment works. If a significant user, such as an industry, has completed in-plant modifications which would change the user's wastewater contribution percentage, the user can present, at a regularly scheduled meeting of the governing body, such factual information, and the city shall then determine if the user's wastewater contribution percentage is to be changed. The city shall notify the user of its findings as soon as possible.

(h) Notification. Each user shall be notified annually, in conjunction with a regular bill, of the rate and that portion of the user charge which are attributable to wastewater treatment services.

(i) Failure to comply. Failure to comply with subsections (g) and (h) above shall in no way be construed as to invalidate the rates. (Ord. No. 1496, 1-21-75; Ord. No. 1519, 5-5-75; Ord. No. 1814, 8-15-78; Ord. No. 1857, 3-5-79; Ord. No. 1895, 9-17-79; Ord. No. 1947, 2-18-80)

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Sec. 30-200. Industrial cost recovery.

(a) Industrial cost recovery system. Each industrial user shall participate in the industrial cost recovery system.

(b) Industrial user's wastewater contribution percentage.

(1) Volume contribution percentage. The director shall determine each industry's average daily volume of wastewater discharged to the wastewater facilities which shall then be divided by the wastewater facility average daily flow design capacity to determine each industry's volume contribution percentage.

(2) BOD contribution percentage. The director shall determine each industry's average daily poundage of BOD discharged to the wastewater facilities, which shall then be divided by the wastewater facility's average daily BOD design capacity to determine each industry's BOD contribution percentage.

(3) Suspended solids contribution percentage. The director shall determine each industry's average daily poundage of suspended solids discharged to the wastewater facilities which shall then be divided by the wastewater facility's average daily suspended solids design capacity to determine each industry's suspended solids contribution percentage.

(c) Determining the annual industrial cost recovery amount.

(1) Each project separate. Each project funded with federal construction grant money shall be treated as a separate cost recovery project.

(2) Each project classified. Each project funded with federal construction grant money shall be classified according to wastewater volume, BOD, suspended solids and/or ammonia nitrogen.

(3) Project cost allocation. The federal construction grant amount allocable to each classification shall be determined for each project.

(4) Each industrial user's industrial cost recovery project amount. Each industrial user's contribution percentages determined in (b)(1), (b)(2) and (b)(3) (above), shall be multiplied by the project cost allocation amount for volume, BOD, and suspended solids, as determined in (c)(3) above, respectively. The sum of the three (3) products shall determine each industrial user's cost recovery project amount.

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(5) Each industrial user's industrial cost recovery annual payment. Each industrial user's cost recovery project amount shall be divided by the industrial cost recovery period to determine each industry's annual cost recovery project amount. Each industrial user's annual cost recovery amount shall be determined by adding all cost recovery project amounts for that industrial user.

(6) Flat rate cost recovery charge. The director may assess a flat rate cost recovery charge on all small industries provided the director can demonstrate that the recovery charge is fair and equitable and can demonstrate that it would be administratively impractical to monitor the industries.

(d) Review of the annual industrial cost recovery amount. The director shall review the cost recovery system as well as each industrial user's wastewater contribution percentage on an annual basis to assure equity of the annual industrial cost recovery system. If an industrial user has completed in-plant modifications which would change that industry's wastewater contribution percentage, the user can present to the director such factual information and the director shall then determine if the industry's wastewater contribution percentage is to be changed. The director shall notify the industry of the findings within thirty (30) days. (Ord. No. 1496, 1-21-75)

Sec. 30-201. Billing.

(a) Sewer use charges. Sewer use billing shall be monthly and shall be based on the rates determined in section 30-199. The sewer use bill shall be submitted with the monthly water bill and the provisions of sections 30-81, 30-83 and 30-86 shall apply.

(b) Industrial cost recovery charges. The city shall submit an annual statement to each industry for the annual industrial cost recovery amount. (Ord. No. 1496, 1-21-75)

Sec. 30-202. Utility board of appeals established.

There is hereby established for the City of Rapid City a utility board of appeals to be composed of five (5) members all of whom shall be legal residents of the City of Rapid City and shall serve without pay. (Ord. No. 1496, 1-21-75)

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Sec. 30-203. Appointment; terms of members; filling of vacancy.

(a) The mayor, with the approval of the common council shall appoint each member of the board of a term of three (3) years provided that upon organization of the board one member shall be appointed for a three-year term, two (2) members for a two-year term and two (2) members for a one-year term. Thereafter appointments shall be made as they expire for the full term of three (3) years.

(b) All terms of office shall expire on July 1.

(c) In case of any vacancy in membership of the board due to death, resignation, or otherwise, a successor shall be appointed persuant to the requirements of this section to fill the unexpired portion of the term of the member he replaces. If a member of the board fails to attend three (3) consecutive meetings, his seat on the board shall be termed vacant.

(d) Representation on the board of appeals shall consist of the following: One member shall be a residential user, one member shall be an industrial user, one member shall be a commercial user, one member shall be an institutional user and one member may be appointed without regard to the type of user he may be. (Ord. No. 1496, 1-21-75)

Sec. 30-204. Purposes and powers.

The board shall hear all appeals filed with said board under this article and any other section of the Revised Ordinances of Rapid City as may be determined by the common council and any person who feels that they are grieved by an decision of the director of public works under this article may file an appeal with the board on the terms and conditions hereinafter specified. The board shall have the power to adopt, amend or modify any order or determination made by the director of public works or his designee under this article. (Ord No. 1496, 1-21-75)

Sec. 30-205. Filing of appeals.

(a) Form of appeal. Any person entitled to appeal may do so by filing at the office of the director of public works within ten (10) days from the date of determination or order of the director of public works or his designee and the appeal shall contain the following:

(1) A heading in the words: "Before the Utility Board of Appeals of the City of ____________________."

(2) A caption reading: "Appeal of ____________________" giving the names of all appellants participating in the appeal.

(3) A brief statement setting forth the legal interest of each of the appellants in the building or the land involved in the notice and order.

(4) A brief statement in ordinary and concise language of the specific order or action protested, together with any material facts claimed to support the contentions of the appellant.

(5) A brief statement in ordinary and concise language of the relief sought, and the reasons why it is claimed the protested order or action should be reversed, modified, or otherwise set aside.

(6) The signatures of all parties named as appellants, and their official mailing addresses.

(7) The verification (by declaration under penalty of perjury) of at least one appellant as to the truth of the matters stated in the appeal.

(b) Processing of appeal. Upon receipt of any appeal filed pursuant of this article, the director of public works shall notify the chairman and shall present the appeal at the next regular or special meeting of the utility board of appeals.

(c) Scheduling and noticing appeal for hearing. As soon as practicable after receiving the written appeal the utility board of appeals shall fix a date, time, and place for the hearing of the appeal by the board. Such date shall be not less than ten (10) days nor more than sixty (60) days from the date the appeal was filed with the director of public works. Written notice of the time and place of the hearing shall be given at least ten (10) days prior to the date of the hearing to each appellant by the secretary of the board either by causing a copy of such notice to be delivered to the appellant personally or by mailing a copy thereof, postage prepaid, addressed to the appellant at his address shown on the appeal.

(d) Failure of any person to file an appeal in accordance with the provisions of this article shall constitute a waiver of his right to an administrative hearing and adjudication of the notice and order, or any portion thereof.

(e) Scope of hearing an appeal. Only those matters or issues specifically raised by the appellant shall be considered in the hearing of the appeal.

(f) Staying of order under appeal. Except for certain orders made pursuant to this article, enforcement of any notice and order of the director of public works or his designee issued under this article shall be stayed during the pendency of an appeal therefrom which is properly and timely filed. (Ord. No. 1496, 1-21-75)

Sec. 30-206. Procedure for conduct of hearing appeals.

(a) Hearing examiners. The board may appoint one or more hearing examiners or designate one or more of its members to serve as hearing examiners to conduct the hearings. The examiner hearing the case shall exercise all powers relating to the conduct of hearings until it is submitted by him to the board for decision.

(b) Record. A record of the entire proceedings ahll be made by tape recording, or by any other means of permanent recording determined to be appropriate by the board.

(c) Reporting. The proceedings at the hearing shall also be reported by a phonographic reporter if requested by any party thereto. A transcript of the proceedings shall be made available to all parties upon request and upon payment of the fee prescribed therefor. Such fees may be established by the board, but shall in no event be greater than the cost involved.

(d) Continuances. The board may grant continuances for good cause shown; however, when a hearing examiner has been assigned to such hearing, no continuances may be granted except by him for good cause shown so long as the matter remains before him.

(e) Oaths; certification. In any proceedings under this article, the board, any board member, or the hearing examiner has the power to administer oaths and affirmations and to certify to official acts.

(f) Reasonable dispatch. The board and its representatives shall proceed with reasonable dispatch to conclude any matter before it. Due regard shall be shown for the convenience and necessity of any parties or their representatives.

(g) Form of notice of hearing. The notice to appellant shall be substantially in the following form, but may include other information:

"You are hereby notified that a hearing will be held before (the board or name of hearing examiner) at ____________ on the ________ day of ________________, 19_________, at the hour__________ upon the notice and order served upon you. You may be present at the hearing. You may be, but not be, represented by counsel. You may present any relevant evidence and will be given full opportunity to cross-examine all witness testifying against you. You may request the issuance of subpoenas to compel the attendance of witnesses and the production of books, documents or other things by filing an affidavit therefor with (board or name of hearing examiner)."

(h) Subpoenas

(1) Filing of affidavit. The board or examiner may obtain the issuance and service of a subpoena for the attendance of witnesses or the production of other evidence at a hearing upon the request of a member of the board or upon the written demand of any party. The issuance and service of such subpoena shall be obtained upon the filing of an affidavit therefore which states the name and address of the proposed witness; specifies the exact things sought to be produced and the materiality thereof in detail to the issues involved; and states that the witness has the desired things in his possession or under his control. A subpoena need not be issued when the affidavit is defective in any particular.

(2) Cases referred to examiner. In cases where a hearing is referred to an examiner, all subpoenas shall be obtained through the examiner.

(3) Penalties. Any person who refuses without lawful excuse to attend any hearing, or to produce material evidence in his possession or under his control as required by any subpoena served upon such person as provided for herein shall be quilty of a misdemeaner.

(i) Conduct of hearing.

(1) Rules. Hearings need not be conducted according to the technical rules relating to evidence and witnesses.

(2) Hearsay evidence. Hearsay evidence may be used for he purpose of supplementing or explaining any direct evidence, but shall not be sufficient in itself to support a finding unless it would be admissible over objection in civil actions in courts of competent jurisdictrion in this state.

(3) Admissibility of evidence. Any relevant evidence shall be admitted if it is the type of evidence on which responsible persons are accustomed to rely in the conduct of serious affairs, regardless of the existence of any common law or statutory rule which might make improper the admission of such evidence over objection in civil actions in courts of competent jurisdiction in this state.

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(4) Oral evidence. Oral evidence shall be taken only an oath or affirmation.

(5) Exclusion of evidence. Irrelevant and unduly repititious evidence shall be excluded.

(6) Rights of parties. Each party shall have these rights, among others:

   (a) To call and examine witnesses on any matter relevant to the issues of the hearing;

   (b) To introduce documentary and physical evidence;

   (c) To cross-examine opposing witnesses on any matter relevant to the issues of the hearing;

   (d) To impeach any witness regardless of which party first called him to testify;

   (e) To rebut the evidence against him;

   (f) To represent himself or to be represented by anyone of his choice who is lawfully permitted to do so.

(7) Official notice; what may be noticed. In reaching a decision, official notice may be taken, either before or after submission of the case for decision, of any fact which may be judicially noticed by the courts of this state or of official records of the board or departments and ordinances of the city or rules and regulations of the board.

(8) Parties to be notified. Parties present at the hearing shall be informed of the matters to be noticed, and these matters shall be noted in the record, referred to therein, or appended thereto.

(9) Opportunity to refute. Parties present at the hearing shall be given a reasonable opportunity, on request, to refute the officially noticed matters by evidence or by written or oral presentation of authority, the manner of such refutation to be determined by the board or hearing examiner.

(10) Inspection of the premises. The board or the hearing examiner may inspect any building or premises involved in the appeal during the course of the hearing, provided that (i) notice of such inspection shall be given to the parties before the inspection is made, (ii) the parties are given an opportunity to be present during the inspection, and (iii) the board or

the hearing examiner shall state for the record upon completion of the inspection the material facts observed and the conclusions drawn therefrom. Each party then shall have a right to rebut or explain the matters so stated by the board or hearing examiner.

(j) Method and form of decision.

(1) Hearing before board itself. Where a contested case is heard before the board itself, no member thereof who did not hear the evidence or has not read the entire record of the proceedings shall vote on or take part in the decision.

(2) Hearing before examiner. If a contested case is heard by by a hearing examiner alone, he shall within a reasonable time (not to exceed ninety (90) days from the date the hearing is closed) submit a written report to the board. Such report shall contain a brief summary of the evidence considered and state the examiner's findings, conclusions and recommendations. The report also shall contain a proposed decision in such form that it may be adopted by the board as its decision in the case. All examiner's reports filed with the board shall be matters of public record. A copy of each such report and proposed decision shall be mailed to each party on the date they are filed with the board.

(3) Consideration of report by board; notice. The board shall fix a time, date, and place to consider the examiner's report and proposed decision. Notice therof shall be mailed to each interested party not less than five (5) days prior to the date fixed, unless it is otherwise stipulated by all of the parties.

(4) Exceptions to report. Not later than two (2) days before the date set to consider the report, any party may file written exceptions to any part or all of the examiner's report and may attach thereto a proposed decision together with written argument in support of such decision. By leave of the board, any party may present oral argument to the board.

(5) Disposition by the board. The board may adopt or reject the proposed decision in its entirety, or may modify the proposed decision.

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(6) Proposed decision not adopted. If the proposed decision is not adopted as provided in subsection (5), the board may decide the case upon the entire record before it, with or without taking additional evidence; or may refer the case to the same or another hearing examiner to take additional evidence. If the case is reassigned to a hearing examiner, he shall prepare a report and proposed decision as provided in subsection (2) hereof after any additional evidence is submitted. Consideration of such proposed decision by the board shall comply with the provisions of this section.

(7) Form of decision. The decision shall be in writing and shall contain findings of fact, a determination of the issues presented, and the requirements to be complied with. A copy of the decision shall be delivered to the appellant personally or sent to him by certified mail, postage prepaid, return receipt requested.

(8) Effective date of decision. The effective date of the decision shall be as stated therein. (Ord. No. 1496, 1-21-75)

Secs. 30-207--30-221. Reserved.

DIVISION 7. FUND HANDLING

Sec. 30-222. Use of fees.

(a) All connection fees and tap fees paid to the city pursuant to this article shall be deposited into the general fund, but shall be separately accounted for, and used for the purpose of providing funds for payment of sewer and storm drain bonds.

(b) All sewer use charges, pretreatment permit fees, and ten per cent (10%) of the industrial cost recovery fees paid to the city pursuant to this article shall be deposited in a special wastewater facilities account and used for the purpose of providing funds for payment of wastewater facilities bonds, hereafter issued by the city for the purpose of acquisition, construction and completion of wastewater facility improvements and for the payment of costs of operation, maintenance and repair of the wastewater facilities.

(c) Industrial cost recovery amounts.

(1) Federal share. Fifty per cent (50%) of the industrial cost recovery amount shall be returned to the federal treasury annually.

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(2) Retained amounts. The city shall retain fifty per cent (50%) of the amounts recovered from industrial users. A minimum of eighty per cent (80%) of the retained amounts shall be used solely as indicated in section 35.-928-2 (contained in Appendix B) of the Federal Register dated February 11, 1974. (Ord. No. 1496, 1-21-75)

Secs. 30-223--30-225. Reserved.

DIVISION 8. PROTECTION FROM DAMAGE

Sec. 30-226. Prosecution for damage to system.

No unauthorized person shall maliciously, willfully, or negligently break, damage, destroy, uncover, deface, or tamper with any structure, appurtenance, or equipment which is part of the wastewater facilities. Any person violating this provision shall be subject to immediate arrest under charges of disorderly conduct. (Ord. No. 1496, 1-21-75)

Secs. 30-227--30-230. Reserved.

DIVISION 9. POWER AND AUTHORITY OF INSPECTORS

Sec. 30-231. Inspection of premises.

The Director and other duly authorized employees of the City bearing proper credentials and identification shall be permitted to enter all properties for the purpose of inspection, observation, measurement, sampling and testing to determine compliance with the provisions of this chapter or any other permits issued thereunder. The Director or his duly authorized representative shall have the authority to examine and copy any and all records required to be maintained by Industrial Users for the purpose of determining compliance with Pretreatment Standards and Regulations. The Director or his representatives shall have no authority to inquire into any processes including metallurgical, chemical, oil, refining, ceramic, paper, or other industries beyond that point having a bearing on the kind and source of discharge to the sewers or waterways or facilities for waste treatment. (Ord. No. 2095, 1-1-82)

Sec. 30-232. Observance of safety rules.

While performing the necessary work on private properties referred to in section 30-231, above, the director or duly authorized employees of the city shall observe all safety rules applicable to the premises extablished by the company, and the company shall be held harmless for injury or death to the city employees, and the city shall indemnify the company against loss or damage to its property by city employees and against liability claims and demands for personal injury or property damage asserted against the company and growing out of the gauging and sampling operation, except as such may

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be caused by negligence or failure of the company to maintain safe conditions as required in this article. (Ord. No. 1496, 1-21-75)

Sec. 30-233. Credentials of city representatives.

The director and other duly authorized employees of the city bearing proper credentials and identification shall be permitted to enter all private properties through which the city holds a duly negotiated easement for the purposes of, but not limited to, inspection, observation, measurement, sampling, repair, and maintenance of any portion of the sewage works lying within said easement. All entry and subsequent work, if any, on said easement shall be done in full accordance with the terms of the duly negotiated easement pertaining to the private property involved. (Ord. No. 1496, 1-21-75)

Sec. 30-234. Public access to Information.

Any records, reports or information obtained under this article (1) shall, in the case of Industrial User effluent data, be related to any applicable discharge limitation or prohibition, or permit condition, and (2) shall be available to the public except upon a showing satisfactory to the Director by any person that such records, reports, or information, or particular part thereof, (other than effluent data) to which the Director has access under this article, if made public would divulge methods or procedures entitled to protection as trade secrets of such person. The Director shall consider such record, report, or information, or particular portion thereof confidential in accordance with the purposes of this article, except that such record, report, or information may be disclosed to officers, employees or authorized representatives of the State of South Dakota or the United States concerned with carrying out the provisions of the Clean Water Act or when relevant in any proceeding under this article or other applicable laws. (Ord. No. 2095, 1-1-82)

Secs. 30-235--30-240. Reserved.

DIVISION 10. PENALTIES

Sec. 30-241. Notice of violation.

Any person found to be viiolating any provision of this article, except Division 7, shall be served by the city with written notice stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. The offender shall, within the period of time stated in such notice, permanently cease all violations. (Ord. No. 2496, 1-21-75)

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Sec. 30-242. Violation a misdemeaner.

Any person who shall continue any violation beyond the time limit provided for in section 30-241, above, shall be guilty of a misdeamor. Each day in which any such violation shall continue shall be deemed as a separate offense. (Ord. No. 1496, 1-21-75)

Sec. 30-243. Costs.

Any person violating any of the provisions of this article shall become liable to the city for any expense, loss or damage occasioned by the city by reason of such violations. (Ord. No. 1496, 1-21-75)

Secs. 30-244--30-250. Reserved.

DIVISION 11. VALIDITY

Sec. 30-251. Validity.

The invalidity of any section, clause, sentence, or provision of this article shall not affect the validity of any other part of this article which can be given effect without such invalid part or parts. (Ord. No. 1496, 1-21-75)

Secs. 30-252--30-255. Reserved.

DIVISION 12. IN FORCE

Sec. 30-256. Effective date.

The provisions of this article for the payment of fees shall take effect April 1, 2975. (Ord. No. 1496, 1-21-75)

Sec. 30-157. Publication.

The finance officer of the City of Rapid City is hereby directed to cause this Ordinance [No. 1496] to be published by one insertion in the Rapid City Journal, a newspaper of general circulation printed, published and circulated in the City of Rapid City and hereby designated for that purpose by said council of Rapid City. (Ord. No. 1496, 1-21-75)

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Exhibit IV   Sewer Service Agreement

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SEWER SERVICE AGREEMENT
BETWEEN
RAPID VALLEY SANITATION DISTRICT
AND
CITY OF RAPID CITY, SOUTH DAKOTA

This Agreement made as of the 20 day of October, 1981, by and between the City of Rapid City, a municipal corporation organized under the laws of the State of South Dakota, hereinafter referred to as "City," and the Rapid Valley Sanitary District, a Sanitary District organized under the laws of the State of South Dakota, hereinafter referred to as "District."

RECITALS

1. The City has constructed and operates a sewage disposal system for the purpose of collection, treatment and disposal of sewage;

2. The District has undertaken a project to construct a sewage collection system in the Rapid Valley Sanitary District;

3. The District encompasses an area outside the corporate limits of the City which is so situated that the sewage thereof becomes, or may become, a menace to the residents of such area and to the residents of the City;

4. The District is empowered under SDCL 34-17-27 to enter into a contract with the City to use the facilities of the City for the treatment and disposal of sewage of the District;

5. The City and District desire to enter into a contract to allow the District to use the sewage treatment and disposal facilities of the City, and to establish rights and obligations incident thereto.

In consideration of the mutual covenants, agreements, and conditions contained herein, City and District agree as follows:

SECTION ONE

DEFINITIONS

The following words, terms and phrases are hereby defined and shall be interpreted as such throughout this Agreement. Terms not herein defined shall have the meaning customarily assigned to them.

1. BOD (biochemical oxygen demand) shall mean the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five (5) days at twenty (20) degrees Celsius expressed in milligrams per liter.

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2. Commercial or institutional users shall mean all nonresidential users which introduce only sanitary sewage or primarily segregated domestic wastes into a building sewer.

3. Industrial cost recovery shall mean recovery from the industrial users of the Rapid City Wastewater Treatment System of the amount of Federal grant money used for the purpose of constructing wastewater facilities allocable to the transportation and treatment of waste from such users.

4. Industrial User shall mean any nondomestic source regulated under section 307(b), (c), or (d) of the Clean Water Act that introduces pollutants into the City's or District's wastewater treatment works.

5. Industrial waste shall mean the water-carried wastes from industrial manufacturing or industrial processing as distinct from sanitary sewage. It shall include the trade wastes produced by, but not limited to, food processing and bottling plants, food manufacturing plants, slaughtering plants, tallow works, plating works, disposal services, industrial cleaning plants, fertilizer plants, car and truck washing operations, laundries, cleaning establishments, cooling plants, industrial plants, factories and chemical treatment installations.

6. Minor industrial users shall mean an industrial user not classified as a significant industrial user.

7. National Categorical Pretreatment Standard or Categorical Standard shall mean any regulation containing pollutant discharge limits promulgated by the EPA in accordance with Section 307(b) and (c) of the Act (33 U.S.C. 1347) which applies to a specific category of Industrial users.

8. Significant Industrial User shall mean any user of the City's or District's wastewater disposal system who (i) is subject to National Categorical Pretreatment Standards, (ii) has in its wastes toxic pollutants as defined by Section 307 of the Clean Water Act, or (iii) is found by the District, City, State, or EPA to have significant impact, either singly or in combination with other contributing industries, on the wastewater collection or treatment system, the quality of sludge, the system's effluent quality, or air emissions generated by the system.

9. Suspended solids (SS) shall mean total suspended matter that either floats on the surface of, or is in suspension in water, wastewater, or other liquids, and that is removable by laboratory filtering as prescribed in "Standard Methods for the Examination of Water and Wastewater" and referred to as nonfilterable residue.

10. Wastewater (also sewage) shall mean the spent water of a community. From the standpoint of source, it may be a combination of the liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions, together with any groundwater, surface water, and stormwater that may be present.

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SECTION TWO

USE OF TREATMENT PLANT

City hereby grants to District the right to discharge sewage into the outfall sewer line of the City, and agrees to transport such sewage from the point of entry to the wastewater treatment plant of the City, and to treat and dispose of such sewage, all subject to the conditions contained herein. The District may discharge its sewage into the City outfall line at four (4) connection points in such manner and under such conditions as prescribed by the City Engineer. The District shall be responsible to provide the four (4) connection points and no further connections to the City outfall line shall be made by the District without approval of the City Engineer.

SECTION THREE

PRETREATMENT PROVISIONS

A. The District shall adopt and diligently enforce an ordinance which conforms to 40 CFR §403.8(f)(1)(i-vii) Pretreatment Requirement of minimum legal authorities, and which contain all other legal provisions mandated by this Service Agreement. Also, insofar as the District chooses to administer its own Pretreatment Program, the District shall formulate, fund and execute programmatic procedures which will enable compliance with the "Procedures" and "Funding" requirements contained in 40 CFR §403.8(f)(2) and (3) of the Federal Pretreatment Regulations.

B. The District shall adopt and enforce in its ordinance the following provisions: (i) a provision requiring any industrial user responsible for a significant accidental discharge to notify immediately both the City and the District; (ii) a provision precluding, except where authorized by Categorical Standard, the use of dilution to attain conformance to Pretreatment Standards, and authorizing the District to develop mass limitations for any industrial user using improper dilution; (iii) a provision forbidding and penalizing the knowing transmittal of false information by an industrial user to the City or District; and (iv) a provision granting the District explicit authority to mandate the installation of all necessary monitoring and pretreatment facilities by industrial users. The City and the District shall consult and cooperate in the drafting of any supplemental amendments to ordinance which are necessary to ensure the effective administration of the overall Pretreatment Program.

C. The District shall adopt and enforce, in its ordinance, specific discharge limits at least as stringent as those limits enumerated and described in Sections 30-163 and 30-164 of the City ordinance.

D. Once promulgated, Categorical Standards for a particular industrial category shall supersede all conflicting specific discharge limits as they apply to that industrial category. The City shall notify all affected industrial users of pertinent 40 CFR §403.12 reporting requirements.

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E. The City shall make the final determination, subject only to 40 CFR §403.6 Federal or State review, as to whether a particular industrial user is a Categorical Industry. The City may request that the District collect and forward to the City all information necessary to make this determination.

F. Using the definition contained in Section 30-1 of the City ordinance, the City shall make the final determination as to whether a particular industrial user is a significant industrial user. The City may request that the District collect and forward to the City all information necessary to make this determination. The District shall control, through permit, contract or similar means, industrial waste discharges from each significant industrial user which discharges into its community sewer system.

G. The District shall file with the City a certified copy of its industrial waste discharge ordinance and any amendments thereto, and each industrial waste permit or contract issued pursuant to the ordinance. The District shall deliver to the City, in a timely fashion, copies of all industrial monitoring reports, including 40 CFR §403.12 compliance reports. This records requirement shall apply both to self-monitoring conducted by industrial users in accordance with Federal, State or local requirements, and to any compliance monitoring conducted by the District.

H. Any authorized officer or employee of the City may enter and inspect any part of the community sewer system of the District. The right of entry and inspection shall extend to public streets, easements, and property within which the system is located. Moreover, the City shall be allowed, as appropriate, to enter on private property to inspect industrial waste discharges. The District shall make all necessary legal and administrative arrangements for the inspections. The right of inspection shall include onsite inspection of pretreatment and sewer facilities, observation, measurement, sampling testing and access to all 40 CFR §403.12 compliance records located on the premises of the industrial user.

I. The City and District may enter into a pretreatment agreement providing the City with the legal authority to carry out technical and administrative procedures necessary to implement a Pretreatment Program within the District. These procedures may include, among others, updating the industrial waste survey, providing technical services, such as process chemical analysis and engineering advice, relating to the issuance of review of industrial waste dicharge permits, inspecting and monitoring industrial waste discharges, waste discharge facilities and operation of permittees, and providing technical assistance for local enforcement efforts. Where pretreatment delegation occurs, the City shall bill the District for costs incurred by the City in conjunction with the administration of the Pretreatment Program on behalf of the District.

J. The City shall review the District ordinance and amendments thereto for conformance to 40 CFR §302.8(f)(1)(i-vii) Pretreatment Requirements for minimum legal authorities, and for the inclusion of all other legal provisions mandated by the Service Agreement. The City shall periodically review the enforcement efforts of the District to ascertain whether Pretreatment Requirements are being diligently enforced at the local level.

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Insofar as the District administers its own Pretreatment Program, the City shall periodically review District programmatic procedures to ensure that the District is administering its Pretreatment Program in technical conformance to the "Procedures" and "Funding" requirements under 40 CFR §403.8(f)(2) and (3) of the Federal Pretreatment Regulations.

K. Where a discharge to the City reasonably appears to present an imminent endangerment to the health or welfare of persons, or presents or may present an endangerment to the environment, and threatens to interfere with the operation of the City system, the City shall immediately initiate investigative procedures to identify the source of the discharge, and take any steps necessary to halt or prevent the discharge.

If necessary, the City shall seek injunctive relief against the District and any industrial user contributing significantly to the emergency condition. In the case of a discharge which does not reasonably appear to present an imminent endangerment to the health or welfare of persons, the City shall provide formal notice to the District and to any industrial user contributing significantly to the emergency condition, and an opportunity to respond to the emergency condition.

L. If the District systematically fails or refuses to fulfill any pretreatment obligations, the City may formulate and issue a remedy decree containing a discussion of the nature of pretreatment violations, an enumeration of remedial actions to be taken by the District and a time schedule for attaining compliance with all Pretreatment Requirements. A reasonable remedy decree shall be specifically enforceable in a court of competent jurisdiction. Where the District fails to comply with the terms of the remedy decree, the City may upon thirty (30) days written notice refuse to accept any industrial waste discharges from the District.

M. The District shall indemnify the City for all damages, fines, and costs incurred as a direct result of industrial waste discharge from the District. The District shall reimburse the City for fines or costs stemming from injury to City personnel, damages to City facilities, disruption of treatment processes or operations, degradation of sludge quality, NPDES permit violations, and other air, water and sludge quality violations.

SECTION FOUR

COMPENSATION FORMULA FOR USE OF CITY SYSTEM

The compensation provided herein is based on a study conducted by the Rapid City engineering firm of Utility Engineering Corporation. This study states the operation, maintenance, and repair costs for the existing sewage treatment plant, the existing collection system and the bonded indebtedness incurred by the City in the construction of the treatment plant.

The following figures are the estimated budget needs of the City in the operation, maintenance, and repair of the treatment plant and collection system, the amortization of the bonded indebtedness, and the capital improvements.

USER CHARGE ALLOCATION COSTS PER 100 FT^3 OF SEWAGE FLOW PER SERVICE CONNECTION:

OMR - Treatment Plant and Collection System	\$0.315/100 ft.^{3}
AMORTIZATION	\$0.083/100 ft.^{3}
CAPITAL IMPROVEMENTS	\$0.105/100 ft.^{3}

PERCENT OF OMR TO TREATMENT PLANT	- 76%
PERCENT OF OMR TO COLLECTION SYSTEM	- 24%
PERCENT OF AMORTIZATION	- 100%

76% x \$0.2394
24% x \$0.0756
100% x \$0.083
100% x \$0.105

The costs listed above used to establish the City sewer use charge of \$0.49 per 100 cubic feet of waste water. In computing the compensation herein the total costs of the OMR to the treatment plant plus the total costs of the amortization plus ten percent (10%) of the OMR to the collection system, plus the total costs of capital improvements were used.

A.	OMR - Treatment Plant	\$0.2394
B.	AMORTIZATION	\$0.083
C.	10% OMR - Collection System 0.10 x 0.0756	\$0.0076
D.	CAPITAL IMPROVEMENTS	\$0.105
		\$0.435/100 ft.^{3} of wastewater

SECTION FIVE

ANNUAL COMPUTATION OF FORMULA

The above-mentioned formula shall be reviewed by City and District on an annual basis, such review to be completed by the 1st day of July of each year. This review shall be conducted to reevaluate the basis of the above-mentioned formula to insure that such formula represents the District's proportionate share of the cost of additions to the Wastewater Treatment Plant; the cost of operation, maintenance, and repair on the Wastewater Treatment Plant and additions; the cost of retirement of the bonded indebtedness of the City to construct the treatment plant; and the cost of the operation, maintenance, and repair of the City collection system used by the District.

SECTION SIX

COMPENSATION AND RATE DETERMINATION

The District shall compensate the City for all sewage and industrial wastes conveyed to the City Wastewater Treatment Plant by the District by using the following methods of rate determination:

A. Residential Users.

The amount of sewage flow from residential connections shall be determined yearly from the metered water during the months of December, January and February as reflected in the January, February and March water billings. The average monthly water use during December, January and February as reflected in the January, February and March water billings measured in 100's of cubic feet, shall be multiplied by $0.435 and the product will determine the monthly sewer use charge for the 12-month period commencing after April 1 for each year. The amount of sewage flow from new residential users or intermittent users shall be based on the average water use of eight hundred and sixty (860) cubic feet per month; this volume shall be used until the end of the next averaging period (December, January and February). For any of the three (3) averaging months in which the meter is not actually read, the amount of eight hundred sixty (860) cubic feet shall be inserted for that month to determine the average for the three (3) months.

B. Commercial and Institutional Users.

The amount of sewage flow from commercial and institutional users shall be determined from the monthly metered water used by such users unless special allowances are made as provided herein or the sewage is metered as provided for herein. The monthly sewer use charge for commercial and institutional connections shall be determined by multiplying the monthly sewage volume in 100's of cubic feet by $0.435 per one hundred (100) cubic feet.

C. Industrial users.

The amount of sewage flow from idustrial users shall be determined by multiplying the monthly metered water using, including metered water from nondistrict sources, unless special allowances are made or unless the sewage flow is metered as provided herein. The sewer charge for industrial connections shall be determined by multiplying the monthly sewage volume measured in 100's of cubic feet, by $0.234 per One Hundred (100) cubic feet whenever the BOD concentration is less than Two Hundred Fifty (250) mg/l and the suspended solids concentration is less than Three Hundred (300) mg/l based on a 24-hour flow proportioned, composite sample. Whenever the BOD concentration exceeds Two Hundred Fifty (250) mg/l or the suspended solids concentration exceeds Three Hundred (300) mg/l, based on a 24-hour, flow-proportioned, composite sample, the sewage use charge rate shall be increased according to the following schedule:

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24-Hour Surcharge Composite Concentration (mg/l)	BOD Class	Suspended Solids Class	($/100 cubic feet) BOD	Suspended Solids
0— 250	I	A	0	0
250— 300	II	B	0.0075	0
300— 350	III	C	0.0150	0.0075
350— 400	IV	D	0.0225	0.0150
400— 450	V	E	0.0300	0.0225
450— 500	VI	F	0.0375	0.0300
500— 550	VII	G	0.0450	0.0375
550— 600	VIII	H	0.0525	0.0450
600— 650	IX	J	0.0600	0.0525
650— 700	X	K	0.0675	0.0600
700— 750	XI	L	0.0750	0.0675
750— 800	XII	M	0.0825	0.0750
800— 850	XIII	N	0.0900	0.0825
850— 900	XIV	O	0.0975	0.0900
900— 950	XV	P	0.1050	0.0975
950—1000	XVI	Q	0.1125	0.1050
Greater than 1000	XVII	R	$0.0075 per each 50 increment	

D. Meter Readings.

It is understood by City and District that the District relies on the users of its sewage system to report on their own water meter readings. The Districct shall make a good faith effort to make actual meter readings of residential users at the beginning and at the end of the three (3) month estimate period. The District shall also make a good faith effort to make periodic actual water meter readings of all sewer users.

E. Special Arrangements.

Any commercial, industrial, and institutional water receiving metered water for uses resulting in portions of the water not going to the City Wastewater Treatment Plant may have its sewer use charge adjusted by showing, at the owner's expense, what percentage of the metered water is not received in the Wastewater Treatment Plant. The maximum allowance for irrigation shall be an application rate of twenty-four (24) inches per year per square foot of area being irrigated.

F. Monitoring.

The District shall require industrial users who are declared industries to perform monitoring, at their own expense, to determine their industrial classification rate. Upon request of the City's Director of Public Works, the District shall require the owner of any of the premises serviced by a building sewer carrying over ten thousand (10,000) gallons per day of

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industrial waste to install a suitable device for continuously recording the flow discharged to the City's sewer, together with a suitable control manhole to facilitate observation ands sampling of the waste.

G. Exempt from monitoring.

All minor industries shall be exempt from self-monitoring except as provided above.

H. Sewage volume measurement.

(1) The District may allow any commercial, institutional or industrial user to measure its actual sewage flow in lieu of basing the sewage use charge on the metered water. In such cases, the conditions set forth herein shall apply.

(2) The District shall require any commercial, institutional or industrial user receiving nonmetered water shall either install water meters for all nonmetered sources or provide sewage flow measurement in accordance to the conditions set forth herein.

(3) All meters for nonmetered water sources and sewage flow measurement devices shall be installed in accordance with plans and specifications approved by the director. All costs for design and installation shall be borne by the owner. The owner shall guarantee the city access to the meter or meters for monthly meter readings.

I. Control Manholes.

Upon request of the City's Director of Public Works, the District shall require the owner of any property served by a building sewer carrying industrial wastes to install a suitable control manhold on the building sewer to facilitate observation and sampling of the wastes. Such manhole, when required shall be constructed in accordance with plans approved by the City's Director of Public Works.

SECTION SEVEN

RECORDS AND PAYMENT

The District shall maintain a monthly sewer charge record of each user who conveys sewage and/or industrial waste to the City Wastewater Treatment Plant using the methods of rate determination described above. The District shall submit an accounting of the total usage and the total sewer use charges determined as described above, to the City on a monthly basis. The sewer use charges in the District as determined above within thirty (30) calendar days after the end of each month. The District shall compensate the City irrespective of whether the District receives payments from its users.

SECTION EIGHT

INDUSTRIAL COST RECOVERY SYSTEM

In the event an industrial user, as defined herein, shall desire to convey industrial wastes to the Wastewater Treatment Plant of the City, this Agreement shall be amended to include an industrial cost recovery system as provided in Section 30-200 of Article III of Chapter 30 fo the Revised Code of Ordinances of the City of Rapid City, South Dakota, a copy of which is attached hereto and by reference made apart hereof. No industrial user will be allowed to use the City's Water Treatment Plant until such industrial cost recovery system is implemented by mutual agreement between City and District.

SECTION NINE

INSPECTIONS OF METERS AND RECORDS

It shall be the duty of the District to regularly inspect all water and sewage meters to ensure that such meters are in good working condition. The District shall require that each user conveying sewage and/or industrial waste to the City Wastewater Treatment Plant shall guarantee to the City access to all water and sewage meters for inspection at any time deemed necessary by the City. The District shall allow the City to inspect its rcords on water and sewage usage and billing at any time requested by the City.

SECTION TEN

ANNEXATIONS TO DISTRICT

The District shall not allow the use of the City Wastewater Treatment Plant by anyone not within the boundaries of the Rapid Valley Sanitary District. If the District should expand its boundaries, it shall not allow anyone within the extention of such boundaries to convey sewage or industrial waste to the City Wastewater Treatment Plant without prior written approval of the City Plant. The present boundaries of the Rapid Valley Sanitary District are defined in the map entitled "Boundaries of the Rapid Valley Sanitary District" attached hereton and by reference made a part hereof.

SECTION ELEVEN

TEMPORARY DISCONTINUANCE OF SERVICE

The City reserves the right to temporarily discontinue service to the District whenever it is necessary to ensure proper operation of the City sewer system. No claims for damages for such discontinuance shall be made by the District against the City.

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SECTION TWELVE

TERM AND TERMINATION OF AGREEMENT

This Agreement shall be in full force and effect for a period of twenty (20) years from the date of execution of this Agreement; however, either party may terminate this Agreement upon one (1) year's written notice served upon the other party by delivering the same to the Mayor of the City of Rapid City or the Chairman of the Board of Trustees of the District, or at any time upon mutual consent of both parties.

SECTION THIRTEEN

SALE OF SYSTEM ON ANNEXATION BY CITY

If the City annexes the area of land described below, or any portion thereof, the District agrees to sell to the City, if the City desires to purchase, that portion of its sewer system within the annexed area, the maximum purchase price of such system to be the District's actual cost of construction of such system, such cost being exclusive of any Federal monies used to finance such construction. This section shall not be interpreted so as to require the City to purchase such portion of the District's system upon annexation of the area of land described below.

The area of land mentioned above is described as follows:

> That area of land lying west of Sixteenth section line that divides the east one-half and the west one-half of the east one-half of Section Five (5), Township One North (T1N), Range Eight East (R8E) of the Black Hills Meridian (BHM), and which also lies north of the sixteenth section line that divides the north one-half and the south one-half of the south one-half of the above-mentioned section, that is not a portion of the corporate limits of the City of Rapid City, South Dakota, as of the date of execution of this Agreement.

SECTION FOURTEEN

TERMINATION OF PRIOR AGREEMENT

This Agreement shall supersede and terminate all prior agreements between the parties insofar as such agreements are inconsistent herewith; all other agreements shall remain in full force and effect.

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IN WITNESS WHEREOF the parties hereto have executed this Agreement consisting of eleven (11) pages, on the date first above written.

RAPID VALLEY SANITARY DISTRICT

President, Board of Trustees

ATTEST:

Kathy L. Graff

(SEAL)

CITY OF RAPID CITY, SOUTH DAKOTA

Mayor

ATTEST:

Kent Bunger

Finance Officer

(SEAL)

PRETREATMENT AGREEMENT
BETWEEN
RAPID VALLEY SANITATION DISTRICT
AND
CITY OF RAPID CITY, SOUTH DAKOTA

This Agreement made as of the ______ day of __________, 198_, by and between the City of Rapid City, a municipal corporation organized under the laws of the State of South Dakota, hereinafter referred to as "City," and the Rapid Valley Sanitary District, a Sanitary District organized under the laws of the State of South Dakota, hereinafter referred to as "District."

The City and District hereby agree to cooperate in the effort to attain full compliance with the requirements of the federal Pretreatment Regulations and to establish a Pretreatment Program designed to facilitate the safe and efficient handling of industrial waste discharges in the District.

Using the Industrial Waste Survey and other pertinent information, the City shall identify industrial users which may be subject to the POTW Pretreatment Program. Using the Industrial Waste Survey, information from permit applications, the results of preliminary inspection, surveillance and monitoring and any other pertinent information, the City shall determine the character and volume of pollutants contributed to the POTW by the industrial users in the District. The City shall notify industrial users in the District of applicable Pretreatment Standards and applicable requirements under sections 204(b) and 405 of the Clean Water Act and Subtitles C and D of the Resource Conservation and Recovery Act.

Any compilation, index or inventory of industrial users subject to Pretreatment Standards or Requirements, or of the character or volume of pollutants contributed to the POTW by these industrial users will be made available upon request to the Approval Authority and to the District.

The District shall consult and cooperate with the City in the effort to identify industrial users and determine the character and volume of pollutants contributed to the POTW by these industrial users.

For the purposes of this Agreement, Approval Authority means the EPA Regional Administrator for Region VIII.

After analyzing information provided by the Industrial Waste Survey, industrial user permit applications and the results of any industrial self-monitoring or compliance monitoring, the City shall make a formal recommendation regarding the status of each industrial user permit application. The recommendation should include an enumeration of all permit conditions, including conditions relating to the installment of monitoring or pretreatment facilities, necessary to enable compliance by the industrial user with Pretreatment Standards and Requirements. The City shall also make formal recommendations regarding the status of any industrial user permit being considered for modification, renewal (after expiration) or revocation. In all cases, the final determination regarding the status of an industrial user's permit will be made by the District.

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The City shall receive and analyze all industrial user self-monitoring reports, including, but not limited to, reports required by 40 CFR §403.12 of the Federal Pretreatment Regulations. The City shall conduct random and investigative compliance monitoring, including inspection, surveillance and monitoring, of industrial users in the District to detect any noncompliance with Pretreatment Standards and Requirements. The District agrees to make all necessary legal and administrative arrangements for these compliance monitoring procedures. The City agrees to make available, upon request, to the Approval Authority and to the District copies of all industrial self-monitoring and City compliance monitoring reports.

Where enforcement action becomes necessary, the City shall refer the case along with documentation of the Pretreatment violation to the proper enforcement authority in the District. At the same time, the City shall make a formal recommendation regarding the technical and legal disposition of the alleged Pretreatment violation. Where administrative hearings are held, the City shall provide its factual findings and formal recommendation regarding the tehcnical and legal disposition of the case. Generally, the City shall provide technical assistance to any enforcement action against the industrial user undertaken by the District.

The City shall bill the District on a quarterly basis for the pretreatment costs incurred by the City in conjunction with the adminstration of a Pretreatment Program in the District. Also the City shall assist the District upon request in establishing an equitable user fee system to defray the costs of operating a Pretreatment Program for the District.

The City agrees to comply with the public participation requirements of 40 CFR Part 25 and requirements contained in 40 CFR §403.8(f)(2)(vii), providing for notice to the public of significant Pretreatment violations.

The terms of this Pretreatment Agreement shall not in any way impair the City's right to seek contractual remedies contained in the Service Agreement.

This Pretreatment Agreement shall remain in effect for a period of five (5) years. The Pretreatment Agreement shall be automatically renewed for an additional five-year period unless either party provides at least six (6) months prior notice of its intention to terminate this Pretreatment Agreement.

In witness whereof the parties hereto have executed this Agreement consisting of two (2) pages, on the date first above written.

RAPID CITY SANITARY DISTRICT	CITY OF RAPID CITY, SOUTH DAKOTA
______________________________	______________________________
President, Board of Trustees	Mayor
ATTEST:	ATTEST:
______________________________	______________________________
	Finance Officer
(SEAL)	(SEAL)

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Exhibit V   Industrial Waste Permit

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INDUSTRIAL WASTE PERMIT

City of Rapid City

Company Name: ____________________
Mailing Address: ____________________
Address of Premises: ____________________
Telephone Number: ____________________
Name of Person to Contact: ____________________

AUTHORIZATION TO DISCHARGE TO THE RAPID CITY SEWER SYSTEM

____________________ (company name) is authorized hereby to discharge from ____________________ (company address) to the Rapid City Sewer System in accordance with all terms and conditions of Chapter 30 of the Rapid City Ordinance and Exhibit I, both governing the use of the public sewer. This permit is also granted in accordance with the application filed on __________, 19__, Exhibit II, and in conformity with plans, specifications, and other data submitted to the City, all of which are filed with and considered a part of this permit.

Effective this ____ day of ________ 19 __
Expires on the ____ day of ________ 19 __

____
Director of Public Works

Exhibit I

INDUSTRIAL WASTE PERMIT CONDITIONS FOR ______________________
(Industry Name)

A. GENERAL CONDITIONS

1. Violation from Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant more frequently then, or at a level in excess of, that identified and authorized by this permit shall constitute a violation of the terms and conditions of this permit. Such a violation may result in the imposition of civil and/or criminal penalties as provided for in the Rapid City Code, Federal Water Pollution Control Act, and/or General Pretreatment Regulations.

2. Permit Modification, Suspension, Revocation

This permit may be modified, suspended, or revoked in whole or in part during its term for causes incuding the following:

1. Violation of any term or condition of this permit;
2. Obtaining a permit by misrepresentation or failure to disclose fully all relevant facts in either the permit or any required report;
3. Promulgation of a more stringent pretreatment standard by State or Federal agencies having jurisdiction over receiving waters;
4. Changes in the processes used by the permittee or changes in the discharge volume or character;
5. Changes in design or capability of receiving sewage treatment plant.

3. Right of Entry

The permittee shall allow the City Public Works Director or his duly authorized representative bearing proper credentials and identification:

a) To enter all properties for the purpose of inspection, observation, measurement, sampling and testing to determine compliance with the provisions of this chapter; and

b) To examine and copy any and all records required to be maintained by Industrial Users for the purpose of determing compliance with Pretreatment Standards and Regulations.

The Director or his representative shall have no authority to inquire into any industrial processes beyond that point having a bearing on the kind and source of discharge to the sewers or waterways or facilities for waste treatment.

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4. Non-Compliance Notification

In the event the permittee is unable to comply with any of the conditions of this permit, the permittee shall provide the Director with the following information in writing within five (5) days after commencement of such occurrence:

a. Cause of non-compliance;
b. Anticipated time the condition of non-compliance is expected to continue, or if such condition has been corrected, the duration of the period of non-compliance;
c. Steps taken by the permittee to reduce and eliminate the noncomplying discharge; and,
d. Steps to be taken by the permittee to prevent recurrence of the condition of non-compliance.

The City reserves all rights and remedies that it has under or by reason of any statutory law, ordinance, or common law to cure any breach of this agreement or to enforce any penalty for the breach thereof.

5. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the public treatment resulting from noncompliance with any effluent limitation specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge. The permittee shall notify immediately City Authorities of slug discharges, spills that may enter the public sewer, or any other significant changes in operations, wastewater characteristics and constituents.

6. Facilities Operation

The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

7. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering the City's sewerage system.

8. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharges emanate, the permittee shall notify the City Director of such change and shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the City Director.

9. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

10. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

11. Reapplication

If the permittee desires to continue to discharge after the expiration of this permit, it shall reapply on the application forms then in use at least sixty (60) days before this permit expires. Under no circumstances shall the permittee continue to discharge after the expiration of the permit.

B. SPECIFIC CONDITIONS

1. Wastewater discharged into the sanitary sewer system shall not have an average concentration (weighted according to flow) greater than that listed for the substances below.

	Pollutant	Concentration
a.		
b.		
c.		
d.		
e.		
f.		
g.		
h.		

2. The following wastes are prohibited and shall not be discharged into the City's sanitary sewer system:

a.
b.
c.
d.
e.
f.
g.
h.

3. The above-named industry shall install and maintain on its own premises monitoring facilities described as follows:

4. The above-named industry shall install and maintain necessary wastewater treatment as required to comply with this permit and all Federal Categorical Pretreatment Standards and subject to the following conditions and following schedule for compliance:

Pretreatment Description:

Schedule for Compliance:

Activity Required	Date
a.	
b.	
c.	
d.	

5. The industry named above shall sample and analyze its wastewaters for the following pollutants and under the following schedules:

Pollutant	Frequency/Year
a.	
b.	
c.	
d.	
e.	
f.	
g.	
h.	

6. The industry named above shall provide compliance, discharge, and other technical reports according to the following schedule and conditions:

Reports	Date of Submission

EXHIBIT II

INDUSTRIAL SEWER USER PERMIT APPLICATION

1. a) NAME OF BUSINESS ____

b) MAILING ADDRESS ____

c) ADDRESS OF PREMISES ____

d) TYPE OF BUSINESS (Check)
Industrial [ ]   Commercial [ ]   Professional [ ]

e) DESCRIPTION OF BUSINESS ____

____________________________________ Federal SIC No. ____________

f) PERSON TO CONTACT ABOUT THIS APPLICATION __________________________

PHONE __________________________

2. a) Method of Waste Disposal (Check)
City Sewer [ ]   Septic Tank and Leaching [ ]   Haul [ ]

(IF SEPTIC TANK IS CHECKED, GO TO ITEM NO. 7 AND RETURN FORM. NO ADDITIONAL INFORMATION IS NEEDED)

b) Type of Waste Discharge: Domestic only [ ] Industrial & Domestic [ ]
(IF ANSWER IS "DOMESTIC ONLY," GO TO ITEM NO. 7 AND RETURN FORM)

3. a) DAYS OF OPERATION PER WEEK   M   T   W   TH   F   SA   SU   (Circle)

SHIFTS PER DAY ______

b) NUMBER OF EMPLOYEES   Full-time ____   Part-time ____

c) RAW MATERIALS USED (including average rate of usage) ______________

____

____

d) PRODUCTS PRODUCED (type and rate of production) ______________

____

____

e) PROCESS DESCRIPTION ____

____

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EXHIBIT II

4. a) WASTEWATER PRODUCING OPERATIONS (full description)____________________

____

____

b) DURATION OF DISCHARGE____________________________________

HOURLY PEAK____

SEASONAL VARIATIONS______________________________________

SANITARY, BOILER, COOLING WATER DISCHARGE FLOW________________

5. a) Attach site and/or floor plan of facility showing details of process plumbing, sewer lines, connections and appurtenances.

b) If batch process used, describe procedures used to dispose of waste material:

c) Describe any pretreatment, waste storage, spill control, or housekeeping practices used or planned:

6. POLLUTANT CHARACTERISTICS[1]

Check pollutants found in facility's discharge from manufacture of product or as byproduct and provide average concentrations (mg/l)

Group I

BOD		Cyanide	
TSS		Fluoride	
Dissolved Solids		Sodium	
Oil and Grease		Sulfate	
Chloride			

---

[1] If industry is governed by Federal Categorical Standards, provide concentrations of discharge from regulated processes.

EXHIBIT II

POLLUTANT CHARACTERISTICS (continued)

Group II[2]

Acid, alkaline or corrosive material ________
Metal solutions ________
Pesticides ________
Phenols and other toxic organic materials ________
Flammable or explosive materials ________
Radioactive materials ________
Large amounts of soaps or detergents ________
Dyes ________
Temperature over 160°F maximum or 120°F average ________

Group III

65 TOXIC POLLUTANTS LISTED IN CONSENT DECREE AND REFERENCED IN 307(a) of the CWA of 1977

Acenaphthene ___
Acrolein ___
Acrylonitrile ___
Aldrin/Dieldrin ___
Antimony and compounds ___
Arsenic and compounds ___
Asbestos ___
Benzene ___
Benzidine ___
Beryllium and compounds ___
Cadmium and compounds ___
Carbon tetrachloride ___
Chlordane ___
Chlorinated benzenes ___
Chlorinated ethanes ___
Chlorinalkyl ethers ___
Chlorinated naphthalene ___
Chlorinated phenols ___
Chloroform ___
2-chlorophenol ___
Chromium and compounds ___
Copper and compounds ___
Cyanides ___
Endrin and metabolites ___
Ethylbenzene ___
Fluoranthene ___
Haloethers ___
Halomethanes ___
Haptachlor and metabolites ___
Hexachlorobutadiene ___
Hexachlorocyclopentadiene ___
Hexachlorocyclohexane ___
Hydrocarbons ___
Isophorone ___
Lead and compounds ___
Mercury and compounds ___
Naphthalene ___
Nickel and compounds ___
Nitrobenzene ___
Nitrophenols ___
Nitrosamines ___
Pentachlorophenol ___
Phenol ___
Phthalate esters ___
Polychlorinated byphenyls (PCB) ___
Polynuclear aromatic ___

(continued)

---

[2] List specific pollutant

EXHIBIT II

Group III (continued)

DDT and metabolites ___
Dichlorobenzenes ___
Dichlorobenzidine ___
Dichloroethylenes ___
2,4-dichlorophenol ___
Dichloropropane & Dichloropropene ___
2,4-dimethylphenol ___
Dinitrotoluene ___
Diphenylhydrazine ___
Endosulfan & metabolites ___

Selenium and compounds ___
Silver and compounds ___
2,3,7,8,-Tetrachloro-dibenzo-p-dioxin (TCDD) ___
Tetrachloroethylene ___
Thallium and compounds ___
Toluene ___
Toxaphene ___
Trichloroethylene ___
Vinyl Chloride ___
Zinc and compounds ___

List any other toxicants not covered in above groups known or anticipated to be present in your discharge ______________________________

____

____

____

7. The information contained in this application is familiar to me and to the best of my knowledge and belief is true, complete, and accurate.

______________________________ (Signature of official)

______________________________ (Position)

Please return to:

Mr. John Healy
Superintendent
Wastewater Department
22 Main Street
Rapid City, S.D. 57701

APPENDIX D

PRIORITY POLLUTANTS
AND
CATEGORICAL INDUSTRY
INFORMATION

TABLE D-1

MATRIX OF PRIORITY POLLUTANTS POTENTIALLY DISCHARGED FROM INDUSTRIAL CATEGORIES

Table 1 lists the 34 categorical industries and the potential priority pollutants that can occur in significant amounts in the wastewater discharged from each group. This does not mean that every facility within a specific group discharges that pollutant; it does mean that there is a high probability that it will be discharged, based on a national survey of the industries conducted by USEPA. In addition, it does not mean that other priority pollutants will not be found in significant quantities, but that, in general, the manufacturing process and raw materials involved do not lead to the discharge of these pollutants.

NOTE: The information in the table was developed from Industry Summaries prepared by the USEPA, dated March 1979, from the published development documents for effluent limitations from industrial point source categories. This information is subject to change and some industry groups may not be regulated.

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TABLE D-1

MATRIX OF POLLUTANTS POTENTIALLY DISCHARGED FROM INDUSTRIAL CATEGORIES

● POLLUTANT FOUND IN SIGNIFICANT QUANTITY

		CATEGORICAL INDUSTRY									
	PRIORITY POLLUTANTS	ADHESIVES	ALUMINUM FORMING	AUTO & OTHER LAUNDRIES	BATTERY MANUFACTURING	COAL MINING	COIL COATING	COPPER FORMING	ELECTRICAL PRODUCTS	ELECTROPLATING	EXPLOSIVES MANUFACTURING
1.	acenaphthene										
2.	acrolein										
3.	acrylonitrile										
4.	benzene					●					
5.	benzidine										
6.	carbon tetrachloride	●									
7.	chlorobenzene					●					
8.	1,2,4-trichlorobenzene										
9.	hexachlorobenzene										
10.	1,2-dichloroethane					●			●		
11.	1,1,1-trichloroethane					●			●		
12.	hexachloroethane										
13.	1,1-dichloroethane										
14.	1,1,2-trichloroethane										
15.	1,1,2,2-tetrachloroethane										
16.	chloroethane										
17.	bis(chloromethyl) ether										
18.	bis(2-chloroethyl) ether										
19.	2-chloroethyl vinyl ether (mixed)										
20.	2-chloronaphthalene										
21.	2,4,6-trichlorophenol										
22.	parachlorometa cresol										
23.	chloroform (trichloromethane)	●	●			●					
24.	2-chlorophenol								●		
25.	1,2-dichlorobenzene								●		
26.	1,3-dichlorobenzene								●		
27.	1,4-dichlorobenzene								●		
28.	3,3'-dichlorobenzidine										
29.	1,1-dichloroethylene										
30.	1,2-trans-dichloroethylene					●					
31.	2,4-dichlorophenol										
32.	1,2-dichloropropane										
33.	1,2-dichloropropylene (1,3-dichloropropene)										
34.	2,4-dimethylphenol										
35.	2,4-dinitrotoluene										
36.	2,6-dinitrotoluene					●					
37.	1,2-diphenylhydrazine										
38.	ethylbenzene	●				●			●		
39.	fluorathene										
40.	4-chlorophenyl phenyl ether										
41.	4-bromophenyl phenyl ether										
42.	bis(2-chlorisopropyl) ether										
43.	bis(2-chloroethoxy) methane										
44.	methylene chloride (dichloromethane)	●	●			●			●		
45.	methyl chloride (chloromethane)										
46.	methyl bromide (bromomethane)										
47.	bromoform (tribromomethane)										
48.	dichlorobromomethane										
49.	trichlorofluoromethane					●					
50.	dichlorodifluoromethane										
51.	chlorodibromomethane										
52.	hexachlorobutadiene										
53.	hexachlorocyclopentadiene										
54.	isophorone										
55.	naphthalene								●		
56.	nitrobenzene										
57.	nitrophenol										
58.	4-nitrophenol										
59.	2,4-dinitrophenol										
60.	4,6-dinitro-o-cresol										
61.	N-nitrosodimethylamine										
62.	N-nitrosodiphenylamine										
63.	N-nitrosodi-n-propylamine										
64.	pentachlorophenol	●									
65.	phenol	●	●						●		

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TABLE D-1 (Continued)

MATRIX OF PRIORITY POLLUTANTS POTENTIALLY DISCHARGED FROM INDUSTRIAL CATEGORIES

● POLLUTANT FOUND IN SIGNIFICANT QUANTITY

	PRIORITY POLLUTANTS / CATEGORICAL INDUSTRY	ADHESIVES	ALUMINUM FORMING	AUTO & OTHER LAUNDRIES	BATTERY MANUFACTURING	COAL MINING	COIL COATING	COPPER FORMING	ELECTRICAL PRODUCTS	ELECTROPLATING	EXPLOSIVES MANUFACTURING
66.	bis(2-ethylhexyl) phthalate	●	●			●					
67.	butyl benzyl phthalate	●									
68.	di-n-butyl phthalate	●	●			●					
69.	di-n-octyl phthalate										
70.	diethyl phthalate	●				●					
71.	dimethyl phthalate	●									
72.	benzo(a)anthracene (1,2-benzanthracene)										
73.	benzo(a)pyrene (3,4-benzopyrene)										
74.	3,4-benzofluoranthene										
75.	benzo(k)fluoranthene (11,12-benzofluoranthene)										
76.	chrysene										
77.	acenaphthylene										
78.	anthracene					●					
79.	benzo(ghi)perylene (1,12-benzoperylene)										
80.	fluorene										
81.	phenanthrene										
82.	dibenzo(a,h)anthracene (1,2,5,6-dibenzanthracene)										
83.	indeno (1,2,3-cd)pyrene (2,3-o-phenylenepyrene)										
84.	pyrene										
85.	tetrachloroethylene			●				●			
86.	toluene					●					
87.	trichloroethylene	●	●								
88.	vinyl chloride (chloroethylene)										
89.	aldrin										
90.	dieldrin										
91.	chlordane (technical mixture & metabolites)										
92.	4,4'-DDT										
93.	4,4'-DDE (p,p'-DDX)										
94.	4,4'-DDD (p,p'-TDE)										
95.	a-endosulfan-Alpha										
96.	b-endolsulfan-Beta										
97.	endosulfant sulfate										
98.	endrin										
99.	endrin aldehyde										
100.	heptachlor										
101.	heptachlor epoxide										
102.	a-BHC-Alpha										
103.	b-BHC-Beta										
104.	r-BHC-(lindane)-Gamma										
105.	g-BHC-Delta										
106.	PCB-1242 (Arochlor 1242)										
107.	PCB-1254 (Arochlor 1254)										
108.	PCB-1221 (Arochlor 1221)										
109.	PCB-1232 (Arochlor 1232)										
110.	PCB-1248 (arochlor 1248)										
111.	PCB-1260 (Arochlor 1260)										
112.	PCB-1016 (Arochlor 1016)										
113.	toxaphene										
114.	antimony (total)	●				●					
115.	arsenic (total)					●			●		
116.	asbestos (fibrous)										
117.	beryllium (total)										
118.	cadmium (total)				●			●	●	●	
119.	chromium (total)	●	●			●	●	●	●	●	
120.	copper (total)	●	●	●		●		●	●	●	
121.	cyanide (total)	●					●			●	
122.	lead (total)	●	●	●	●	●		●	●	●	●
123.	mercury (total)	●			●	●					
124.	nickel (total)		●		●	●				●	
125.	selenium (total)										
126.	silver (total)				●						
127.	thallium (total)					●					
128.	zinc (total)	●	●	●	●	●	●	●	●	●	
129.	2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)										

TABLE D-1 (Continued)

MATRIX OF PRIORITY POLLUTANTS POTENTIALLY DISCHARGED FROM INDUSTRIAL CATEGORIES

● POLLUTANT FOUND IN SIGNIFICANT QUANTITY

		CATEGORICAL INDUSTRY									
	PRIORITY POLLUTANTS	FOUNDRIES	GUM AND WOOD CHEMICALS	INORGANIC CHEMICALS	IRON & STEEL	LEATHER TANNING & FINISHING	MECHANICAL PRODUCTS	NON-FERROUS METALS	ORE MINING & DRESSING	ORGANIC CHEMICALS	PAINT & INK
1.	acenaphthene							●			
2.	acrolein										
3.	acrylonitrile										
4.	benzene		●				●	●		●	●
5.	benzidine										
6.	carbon tetrachloride						●			●	●
7.	chlorobenzene									●	
8.	1,2,4-trichlorobenzene							●			
9.	hexachlorobenzene							●			
10.	1,2-dichloroethane						●	●			
11.	1,1,1-trichloroethane						●				
12.	hexachloroethane										
13.	1,1-dichloroethane						●	●		●	
14.	1,1,2-trichloroethane						●				
15.	1,1,2,2-tetrachloroethane										
16.	chloroethane										
17.	bis(chloromethyl) ether										
18.	bis(2-chloroethyl) ether										
19.	2-chloroethyl vinyl ether (mixed)										
20.	2-chloronaphthalene										
21.	2,4,6-trichlorophenol					●					
22.	parachlorometa cresol										
23.	chloroform (trichloromethane)					●				●	
24.	2-chlorophenol										
25.	1,2-dichlorobenzene					●					
26.	1,3-dichlorobenzene										
27.	1,4-dichlorobenzene					●					
28.	3,3'-dichlorobenzidine										
29.	1,1-dichloroethylene						●				
30.	1,2-trans-dichloroethylene						●				
31.	2,4-dichlorophenol										
32.	1,2-dichloropropane										
33.	1,2-dichloropropylene (1,3-dichloropropene)										
34.	2,4-dimethylphenol										
35.	2,4-dinitrotoluene										
36.	2,6-dinitrotoluene										
37.	1,2-diphenylhydrazine										
38.	ethylbenzene		●			●	●			●	●
39.	fluorathene						●	●			
40.	4-chlorophenyl phenyl ether										
41.	4-bromophenyl phenyl ether										
42.	bis(2-chlorisopropyl) ether										
43.	bis(2-chloroethoxy) methane						●				
44.	methylene chloride (dichloromethane)					●		●		●	●
45.	methyl chloride (chloromethane)										
46.	methyl bromide (bromomethane)										
47.	bromoform (tribromomethane)										
48.	dichlorobromomethane							●		●	
49.	trichlorofluoromethane										
50.	dichlorodifluoromethane										
51.	chlorodibromomethane										
52.	hexachlorobutadiene										
53.	hexachlorocyclopentadiene										
54.	isophorone										
55.	naphthalene					●	●				
56.	nitrobenzene										
57.	nitrophenol										
58.	4-nitrophenol										
59.	2,4-dinitrophenol										
60.	4,6-dinitro-o-cresol										
61.	N-nitrosodimethylamine										
62.	N-nitrosodiphenylamine						●				
63.	N-nitrosodi-n-propylamine										
64.	pentachlorophenol					●	●				●
65.	phenol	●	●		●	●	●		●	●	●

D-5

TABLE D-1 (Continued)

MATRIX OF PRIORITY POLLUTANTS POTENTIALLY DISCHARGED FROM INDUSTRIAL CATEGORIES

● POLLUTANT FOUND IN SIGNIFICANT QUANTITY

PRIORITY POLLUTANTS \ CATEGORICAL INDUSTRY		FOUNDRIES	GUM AND WOOD CHEMICALS	INORGANIC CHEMICALS	IRON & STEEL	LEATHER TANNING & FINISHING	MECHANICAL PRODUCTS	NON-FERROUS METALS	ORE MINING & DRESSING	ORGANIC CHEMICALS	PAINT & INK
56.	bis(2-ethylhexyl) phthalate					●	●	●		●	
67.	butyl benzyl phthalate						●	●			
68.	di-n-butyl phthalate							●		●	
69.	di-n-octyl phthalate							●			
70.	diethyl phthalate						●	●			
71.	dimethyl phthalate										
72.	benzo(a)anthracene (1,2-benzanthracene)										
73.	benzo(a)pyrene (3,4-benzopyrene)							●			
74.	3,4-benzofluoranthene										
75.	benzo(k)fluoranthene (11,12-benzofluoranthene)										
76.	chrysene							●			
77.	acenaphthylene										
78.	anthracene						●				
79.	benzo(ghi)perylene (1,12-benzoperylene)										
80.	fluorene							●			
81.	phenanthrene									●	
82.	dibenzo(a,h)anthracene (1,2,5,6-dibenzanthracene)										
83.	indeno (1,2,3-cd)pyrene (2,3-o-phenylenepyrene)										
84.	pyrene							●			
85.	tetrachloroethylene						●	●		●	●
86.	toluene		●			●				●	●
87.	trichloroethylene										
88.	vinyl chloride (chloroethylene)										
89.	aldrin										
90.	dieldrin										
91.	chlordane (technical mixture & metabolites)										
92.	4,4'-DDT										
93.	4,4'-DDE (p,p'-DDX)										
94.	4,4'-DDD (p,p'-TDE)										
95.	a-endosulfan-Alpha										
96.	b-endolsulfan-Beta										
97.	endosulfant sulfate										
98.	endrin										
99.	endrin aldehyde										
100.	heptachlor										
101.	heptachlor epoxide										
102.	a-BHC-Alpha										
103.	b-BHC-Beta										
104.	r-BHC-(lindane)-Gamma										
105.	g-BHC-Delta										
106.	PCB-1242 (Arochlor 1242)										
107.	PCB-1254 (Arochlor 1254)							●			
108.	PCB-1221 (Arochlor 1221)										
109.	PCB-1232 (Arochlor 1232)										
110.	PCB-1248 (arochlor 1248)							●			
111.	PCB-1260 (Arochlor 1260)										
112.	PCB-1016 (Arochlor 1016)										
113.	toxaphene										
114.	antimony (total)			●				●			
115.	arsenic (total)			●				●			
116.	asbestos (fibrous)			●							
117.	beryllium (total)							●			
118.	cadmium (total)	●		●			●	●		●	
119.	chromium (total)	●	●	●	●	●	●	●		●	●
120.	copper (total)	●	●	●		●	●	●	●	●	●
121.	cyanide (total)			●	●	●		●	●		
122.	lead (total)			●		●	●	●	●	●	●
123.	mercury (total)			●				●		●	●
124.	nickel (total)		●	●		●	●	●			●
125.	selenium (total)			●				●			
126.	silver (total)			●				●			
127.	thallium (total)			●							
128.	zinc (total)	●	●	●	●	●	●	●	●		●
129.	2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)										

TABLE D-1 (Continued)

MATRIX OF PRIORITY POLLUTANTS POTENTIALLY DISCHARGED FROM INDUSTRIAL CATEGORIES

● POLLUTANT FOUND IN SIGNIFICANT QUANTITY

	PRIORITY POLLUTANT	CATEGORICAL INDUSTRY									
		PESTICIDES	PETROLEUM REFINING	PHARMACEUTICALS	PHOTOGRAPHIC SUPPLIES	PLASTICS AND SYNTHETICS	PLASTICS PROCESSING	PORCELAIN ENAMELING	PRINTING & PUBLISHING	PULP, PAPER, AND FIBERBOARD	RUBBER
1.	acenaphthene										
2.	acrolein										
3.	acrylonitrile										
4.	benzene			●	●	●					
5.	benzidine										
6.	carbon tetrachloride										
7.	chlorobenzene										
8.	1,2,4-trichlorobenzene										
9.	hexachlorobenzene										
10.	1,2-dichloroethane										
11.	1,1,1-trichloroethane										
12.	hexachloroethane										
13.	1,1-dichloroethane										
14.	1,1,2-trichloroethane										
15.	1,1,2,2-tetrachloroethane										
16.	chloroethane										
17.	bis(chloromethyl) ether										
18.	bis(2-chloroethyl) ether										
19.	2-chloroethyl vinyl ether (mixed)										
20.	2-chloronaphthalene										
21.	2,4,6-trichlorophenol										
22.	parachlorometa cresol										
23.	chloroform (trichloromethane)			●						●	
24.	2-chlorophenol										
25.	1,2-dichlorobenzene										
26.	1,3-dichlorobenzene										
27.	1,4-dichlorobenzene										
28.	3,3'-dichlorobenzidine										
29.	1,1-dichloroethylene										
30.	1,2-trans-dichloroethylene										
31.	2,4-dichlorophenol										
32.	1,2-dichloropropane										
33.	1,2-dichloropropylene (1,3-dichloropropene)										
34.	2,4-dimethylphenol										
35.	2,4-dinitrotoluene										
36.	2,6-dinitrotoluene										
37.	1,2-diphenylhydrazine										
38.	ethylbenzene					●					
39.	fluoranthene										
40.	4-chlorophenyl phenyl ether										
41.	4-bromophenyl phenyl ether										
42.	bis(2-chlorisopropyl) ether										
43.	bis(2-chloroethoxy) methane										
44.	methylene chloride (dichloromethane)			●	●						
45.	methyl chloride (chloromethane)										
46.	methyl bromide (bromomethane)										
47.	bromoform (tribromomethane)										
48.	dichlorobromomethane										
49.	trichlorofluoromethane										
50.	dichlorodifluoromethane										
51.	chlorodibromomethane										
52.	hexachlorobutadiene										
53.	hexachlorocyclopentadiene										
54.	isophorone										
55.	naphthalene										
56.	nitrobenzene										
57.	nitrophenol										
58.	4-nitrophenol										
59.	2,4-dinitrophenol										
60.	4,6-dinitro-o-cresol										
61.	N-nitrosodimethylamine										
62.	N-nitrosodiphenylamine										
63.	N-nitrosodi-n-propylamine										
64.	pentachlorophenol										
65.	phenol	●	●	●		●					

TABLE D-1 (Continued)

MATRIX OF PRIORITY POLLUTANTS POTENTIALLY DISCHARGED FROM INDUSTRIAL CATEGORIES

● POLLUTANT FOUND IN SIGNIFICANT QUANTITY

PRIORITY POLLUTANT / CATEGORICAL INDUSTRY	PESTICIDES	PETROLEUM REFINING	PHARMACEUTICALS	PHOTOGRAPHIC SUPPLIES	PLASTICS AND SYNTHETICS	PLASTICS PROCESSING	PORCELAIN ENAMELING	PRINTING & PUBLISHING	PULP, PAPER, AND FIBERBOARD	RUBBER
66. bis(2-ethylhexyl) phthalate										
67. butyl benzyl phthalate										
68. di-n-butyl phthalate										
69. di-n-octyl phthalate										
70. diethyl phthalate										
71. dimethyl phthalate										
72. benzo(a)anthracene (1,2-benzanthracene)										
73. benzo(a)pyrene (3,4-benzopyrene)										
74. 3,4-benzofluoranthene										
75. benzo(k)fluoranthane (11,12-benzofluoranthene)										
76. chrysene										
77. acenaphthylene										
78. anthracene										
79. benzo(ghi)perylene (1,12-benzoperylene)										
80. fluorene										
81. phenanthrene										
82. dibenzo(a,h)anthracene (1,2,5,6-dibenzanthracene)										
83. indeno (1,2,3-cd)pyrene (2,3-o-phenylenepyrene)										
84. pyrene										
85. tetrachloroethylene										
86. toluene			●	●	●					
87. trichloroethylene										
88. vinyl chloride (chloroethylene)										
89. aldrin										
90. dieldrin										
91. chlordane (technical mixture & metabolites)										
92. 4,4'-DDT										
93. 4,4'-DDE (p,p'-DDX)										
94. 4,4'-DDD (p,p'-TDE)										
95. a-endosulfan-Alpha										
96. b-endolsulfan-Beta										
97. endosulfant sulfate										
98. endrin										
99. endrin aldehyde										
100. heptachlor										
101. heptachlor epoxide										
102. a-BHC-Alpha										
103. b-BHC-Beta										
104. r-BHC-(lindane)-Gamma										
105. g-BHC-Delta										
106. PCB-1242 (Arochlor 1242)										
107. PCB-1254 (Arochlor 1254)										
108. PCB-1221 (Arochlor 1221)										
109. PCB-1232 (Arochlor 1232)										
110. PCB-1248 (arochlor 1248)										
111. PCB-1260 (Arochlor 1260)										
112. PCB-1016 (Arochlor 1016)										
113. toxaphene										
114. antimony (total)				●						
115. arsenic (total)			●		●					
116. asbestos (fibrous)										
117. beryllium (total)										
118. cadmium (total)			●	●		●	●			
119. chromium (total)		●	●	●	●		●			
120. copper (total)					●	●	●			
121. cyanide (total)	●	●	●	●						
122. lead (total)			●	●	●	●	●			●
123. mercury (total)			●	●						
124. nickel (total)			●	●	●		●			
125. selenium (total)										
126. silver (total)				●						
127. thallium (total)										
128. zinc (total)		●	●	●	●		●			●
129. 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)	●									

TABLE D-1 (Continued)

MATRIX OF PRIORITY POLLUTANTS POTENTIALLY DISCHARGED FROM INDUSTRIAL CATEGORIES

● POLLUTANT FOUND IN SIGNIFICANT QUANTITY

PRIORITY POLLUTANTS	CATEGORICAL INDUSTRY	SOAPS AND DETERGENTS	STEAM ELECTRIC	TEXTILE MILLS	TIMBER PRODUCTS PROCESSING						
1.	acenaphthene										
2.	acrolein										
3.	acrylonitrile										
4.	benzene										
5.	benzidine										
6.	carbon tetrachloride										
7.	chlorobenzene										
8.	1,2,4-trichlorobenzene										
9.	hexachlorobenzene										
10.	1,2-dichloroethane										
11.	1,1,1-trichloroethane										
12.	hexachloroethane										
13.	1,1-dichloroethane										
14.	1,1,2-trichloroethane										
15.	1,1,2,2-tetrachloroethane										
16.	chloroethane										
17.	bis(chloromethyl) ether										
18.	bis(2-chloroethyl) ether										
19.	2-chloroethyl vinyl ether (mixed)										
20.	2-chloronaphthalene										
21.	2,4,6-trichlorophenol										
22.	parachlorometa cresol										
23.	chloroform (trichloromethane)										
24.	2-chlorophenol										
25.	1,2-dichlorobenzene										
26.	1,3-dichlorobenzene										
27.	1,4-dichlorobenzene										
28.	3,3'-dichlorobenzidine										
29.	1,1-dichloroethylene										
30.	1,2-trans-dichloroethylene										
31.	2,4-dichlorophenol										
32.	1,2-dichloropropane										
33.	1,2-dichloropropylene (1,3-dichloropropene)										
34.	2,4-dimethylphenol										
35.	2,4-dinitrotoluene										
36.	2,6-dinitrotoluene										
37.	1,2-diphenylhydrazine										
38.	ethylbenzene										
39.	fluorathene										
40.	4-chlorophenyl phenyl ether										
41.	4-bromophenyl phenyl ether										
42.	bis(2-chlorisopropyl) ether										
43.	bis(2-chloroethoxy) methane										
44.	methylene chloride (dichloromethane)										
45.	methyl chloride (chloromethane)										
46.	methyl bromide (bromomethane)										
47.	bromoform (tribromomethane)										
48.	dichlorobromomethane										
49.	trichlorofluoromethane										
50.	dichlorodifluoromethane										
51.	chlorodibromomethane										
52.	hexachlorobutadiene										
53.	hexachlorocyclopentadiene										
54.	isophorone										
55.	naphthalene										
56.	nitrobenzene										
57.	nitrophenol										
58.	4-nitrophenol										
59.	2,4-dinitrophenol										
60.	4,6-dinitro-o-cresol										
61.	N-nitrosodimethylamine										
62.	N-nitrosodiphenylamine										
63.	N-nitrosodi-n-propylamine										
64.	pentachlorophenol				●						
65.	phenol			●	●						

TABLE D-1 (Continued)

MATRIX OF PRIORITY POLLUTANTS POTENTIALLY DISCHARGED FROM INDUSTRIAL CATEGORIES

● POLLUTANT FOUND IN SIGNIFICANT QUANTITY

PRIORITY POLLUTANTS	CATEGORICAL INDUSTRY	SOAPS AND DETERGENTS	STEAM ELECTRIC	TEXTILE MILLS	TIMBER PRODUCTS PROCESSING						
66.	bis(2-ethylhexyl) phthalate			●							
67.	butyl benzyl phthalate										
68.	di-n-butyl phthalate										
69.	di-n-octyl phthalate										
70.	diethyl phthalate										
71.	dimethyl phthalate										
72.	benzo(a)anthracene (1,2-benzanthracene)										
73.	benzo(a)pyrene (3,4-benzopyrene)										
74.	3,4-benzofluoranthene										
75.	benzo(k)fluoranthene (11,12-benzofluoranthene)										
76.	chrysene										
77.	acenaphthylene										
78.	anthracene										
79.	benzo(ghi)perylene (1,12-benzoperylene)										
80.	fluorene										
81.	phenanthrene										
82.	dibenzo(a,h)anthracene (1,2,5,6-dibenzanthracene)										
83.	indeno (1,2,3-cd)pyrene (2,3-o-phenylenepyrene)										
84.	pyrene										
85.	tetrachloroethylene			●							
86.	toluene			●							
87.	trichloroethylene			●							
88.	vinyl chloride (chloroethylene)										
89.	aldrin										
90.	dieldrin										
91.	chlordane (technical mixture & metabolites)										
92.	4,4'-DDT										
93.	4,4'-DDE (p,p'-DDX)										
94.	4,4'-DDD (p,p'-TDE)										
95.	a-endosulfan-Alpha										
96.	b-endosulfan-Beta										
97.	endosulfan sulfate										
98.	endrin										
99.	endrin aldehyde										
100.	heptachlor										
101.	heptachlor epoxide										
102.	a-BHC-Alpha										
103.	b-BHC-Beta										
104.	r-BHC-(lindane)-Gamma										
105.	g-BHC-Delta										
106.	PCB-1242 (Arochlor 1242)										
107.	PCB-1254 (Arochlor 1254)										
108.	PCB-1221 (Arochlor 1221)										
109.	PCB-1232 (Arochlor 1232)										
110.	PCB-1248 (Arochlor 1248)										
111.	PCB-1260 (Arochlor 1260)										
112.	PCB-1016 (Arochlor 1016)										
113.	toxaphene										
114.	antimony (total)			●							
115.	arsenic (total)			●	●						
116.	asbestos (fibrous)										
117.	beryllium (total)										
118.	cadmium (total)			●							
119.	chromium (total)	●		●	●						
120.	copper (total)	●	●	●	●						
121.	cyanide (total)			●							
122.	lead (total)	●		●							
123.	mercury (total)			●							
124.	nickel (total)	●	●	●							
125.	selenium (total)			●							
126.	silver (total)			●							
127.	thallium (total)										
128.	zinc (total)	●	●	●							
129.	2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)										

TABLE D-2

REGULATED INDUSTRIAL SUBCATEGORIES WITH ASSOCIATED SIC CODES

Industry Category	SIC Code
Adhesives and Sealants	2891
Aluminum Forming	
• Rolling with Emulsions	3353, 3355
• Rolling with Neat Oils	3353, 3355
• Extrusion	3354
• Drawing with Neat Oils	3353, 3355
• Forging	3463
• Drawing with Emulsions or Soaps	3353, 3355
Coal Mining	
• Coal Preparation	1111, 1112, 1211, 1213
• Acid/Ferrugenous Mine Drainage	1111, 1112, 1211, 1213
• Alkaline Mine Drainage	1111, 1112, 1211, 1213
• Areas under Reclamation	1111, 1112, 1211, 1213
• Western Coal Mines	1211, 1213
Coil Coating	
• Steel Basis Material Coating	3479
• Galvanized Basis Material Coating	3479
• Aluminum Basis Material Coating	3479
Copper Forming	3351
• Hot Rolling	3351
• Cold Rolling	3351
• Extrusion	3351
• Drawing	3351
• Pickling	3351
• Alkaline Cleaning	3351
• Forging	3351
• Copper Foil Production	3497, 3351
Electroplating	3471 & 3479
• Electroplating of Common Metals	(Some industries within these subcategories may not be subject to regulations)
• Electroplating of Precious Metals	
• Electroplating of Specialty Metals	
• Anodizing	
• Coatings	
• Chemical Etching & Milling	
• Electroless Plating	
• Printed Circuit Board	
• Chemical Matching	
• Immersion Plating	
• Pickling	
• Bright Dipping	
• Alkaline Cleaning	

Source: Summarized from (1) "Summary of Paragraph 8 Exclusions," EGD, OWRS, EPA, July, 1981; (2) Standard Industrial Classification Manual, Executive Office of the President, Office of Management and Budget, 1972.

TABLE D-3 (Continued)

REGULATED INDUSTRIAL SUBCATEGORIES WITH ASSOCIATED SIC CODES

Industry Category	SIC Code
Foundries	
• Iron and Steel	3322, 3324, 3325
• Copper	3362
• Aluminum	3361
• Zinc	3369
• Lead	3369
• Mangnesium	3369
Inorganic Chemcicals	
• Chlorine & Na or K Hydroxide	2812
• Hydrofluoric Acid Production	2819
• Na Dichromate & Sulfate Production	2819
• Titanium Dioxide	2816
• Aluminum Fluoride Production	2819
• Chrome Pigment	2816
• Copper Sulfate Production	2819
• Hydrogen Cyanide Production	2819
• Nickel Sulfate Production	2819
• Sodium Bisulfite Production	2819
• Soldium Silicofluoride Production	2819
Iron and Steel Manufacturing (BAT subcategorization scheme)	
• Cokemaking	3312
• Sintering	3312
• Ironmaking	3312
• Steelmaking	3312
• Vacuum Degassing	3312
• Continuous Casting	3312
• Hot Forming	3312, 3315, 3317^1
• Scale Removal	3312, 3315, 3317^1
• Acid Pickling	3312, 3315, 3317^1
• Cold Forming	3316
• Alkaline Cleaning	3312, 3315, 3316, 3317^1
• Hot Coating	3312, 3315, 3317^1
Leather Tanning and Finishing	
• Hair Pulp Unhairing with Chrome Tanning and Finishing	3111
• Hair Save Unhairing with Chrome Tanning or Finishing	3111
• Unhairing with Vegetable or Alum. Tanning and Finishing	3111
• Finishing of Tanned Hides	3111
• Vegetable or Chrome Tanning of Unhaired Hides	3111
• Unhairing with Chrome Tanning and No Finishing	3111
• Shearing	3111

TABLE D-2 (Continued)

REGULATED INDUSTRIES SUBCATEGORIES WITH ASSOCIATED SIC CODES

Industry Category	SIC Code
Metal Finishing/Mechanical Products	Large number of subcategories including: 3411-29; 3432-66; 3482-3599; 3613-23; 3629-39
Nonferrous Metals Manufacturing	
• Bauxite Refining	2819
• Primary Aluminum Smelting	3334
• Secondary Aluminum Smelting	3341
• Primary Copper Smelting	3331
• Primary Copper Refining	3331
• Secondary Copper	3341
• Primary Lead	3332
• Primary Zinc	3333
• Metallurgical Acid Plants	3331, 3332, 3333
• Primary Columbium Tantalum	3339
• Secondary Silver - Photographic	3341
• Secondary Silver - Nonphotographic	3341
• Primary Tungsten	3339
• Secondary Lead	3341
Ore Mining and Dressing	
• Base and Precious Metals (Cu, Pb, Zn, Ag, Au, Pt, Mo)	1021, 1031, 1041, 1044, 1061
• Ferroalloy Ores	1061
• Uranium, Radium, Vanadium Ores	1094
• Tungsten Ore	1061
• Nickel Ores	1061
• Vanadium Ore (non-radioactive)	1094
• Antimony Ore	1099
Organic Chemicals Manufacturing	2865, 2869
• Processes with Process Water, Contact as Steam Diluent, Quench or Vent Gas Absorbent	
Pesticides Chemicals	
• Organic Pesticide Mfg.	2869, 2879[2]
• Metallo-Organic Pesticides	2869, 2879
• Pesticide Chemicals Formulating	2869, 2879
Petroleum Refining	
• Topping	2911
• Cracking	2911
• Petrochemicals	2911
• Lube	2911
• Integrated	2911

TABLE D-2 (Continued)

REGULATED INDUSTRIES SUBCATEGORIES WITH ASSOCIATED SIC CODES

Industry Category	SIC Code
Pharmaceutical Manufacturing	
• Fermentation Products	2833, 2831
• Extractions	2831, 2833
• Chemical Synthesis Products	2833
• Mixing/Compounding - Formulation	2834
• Research	2831, 2833, 2834
Plastics and Synthetics	
• Polyvinyl Chloride	2821
• Polyvinyl Acetate	
• Polystyrene	2821
• Polypropylene	2821
• Polyethylene	2821
• Cellophane	2821
• Rayon	2823
• ABS and SAN Resin - Copolymers	2821
• Polyester	2821
• Nylon 6	2821
• Cellulose Acetate	2823
• Acrylics	2821
• Ethylene - Vinyl Acetate	2821
• Polytetrafluoroethylene	2821
• Polypropylene Fiber	2823
• Alkyds & Unsaturated Polyester Resins	2821
• Cellulose Nitrate	2821
• Polyamide (Nylon 6/12)	2821
• Polyester Resins (Thermoplastics)	2821
• Silicones	2821
Porcelain Enameling	
• Steel	3631, 3632, 3633, 3639, 3469, 3479, 3431
• Cast Iron	Mainly 3631, 3431
• Aluminum	Mainly 3469, 3479, 3631
• Copper	Mainly 3479, Limited use in 3469 and 3631
Pulp, Paper and Paperboard	
• Unbleached Kraft	2611
• Sodium Based neutral Sulfite Semi-Chemicals	2611
• Ammonia Based Neutral Sulfite Semi-Chemical	2611
• Unbleached Kraft-Neutral Sulfite Semi-Chemical	2611
• Paperboard from Wastepaper	2631
• Dissolving Kraft	2611

TABLE D-2 (Continued)

REGULATED INDUSTRIAL SUBCATEGORIES WITH ASSOCIATED SIC CODES

Industry Category	SIC Code
Pulp, Paper and Paperboard (Continued)	
• Market Bleached Kraft	2611
• OCT Bleached Kraft	2611
• Fine Bleached Kraft	2611
• Papergrade Sulfite	2611, 2621
• Dissolving Sulfite Pulp	2611
• Groundwood - Thermo - Mechanical	2611, 2621
• Groundwood - CMN Papers	2611, 2621
• Groundwood - Fine Papers	2611, 2621
• Soda	2611, 2621
• Unbleached Kraft & Semi-Chemical	2611
• Semi-Chemical	2611
• Wastepaper - Molded Products	2646
• Nonintegrated - Lightweight Paper	2621
• Nonintegrated - Filter and Nonwoven Papers	2621
• Nonintegrated - Paperboard	2631
• Drink	
• Nonintegrated Fine Paper	2621
• Nonintegrated Tissue Papers	2631
• Tissue from Wastepaper	2647
• Papergrade Sulfite (Drum Wash)	2611, 2621
Steam Electric Power Generating	
• Generating Unit	4911, 4931
• Small Unit	4911, 4931
• Old Unit	4911, 4931
• Area Runoff	4911, 4931
Textile Industry	
• Wool Scouring	2299
• Wool Finishing	2231
• Woven Fabric Finishing	2261, 2262, 2269
• Knit Fabric Finishing	2251-59
• Carpet Mills	2271, 2272, 2279
• Stock and Yarn Dyeing & Finishing	2269
• Nonwoven Manufacturing	2297
• Felted Fabric Processing	2291
Timber Products	
• Wood Preserving - Boultonizing	2491
• Wood Furning and Fixtures (with and Without Water Wash Spray Booths or Laundry Facilities)	2511, 2512, 2517, 2521 2531, 2541

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[1] Mainly Zero Dischargers

[2] Low Flow or Zero Discharge

APPENDIX E

DEVELOPMENT OF DISCHARGE LIMITATIONS TO CONTROL INCOMPATIBLE POLLUTANTS

1.0 INTRODUCTION

A critical part of a municipality's task in developing a local pretreatment program is the development of defensible numerical effluent limitations on the discharge of incompatible pollutants. These limitations are often incorporated directly into a municipal ordinance or are applied through individual permits issued to nondomestic users of the sewerage system. Such limits are needed to enforce the Prohibited Discharge Standards of the General Pretreatment Regulations and to implement the three fundamental objectives of the National Pretreatment Program:

- To prevent the introduction of pollutants into the POTW which could interfere with its operation
- To prevent the pass-through of untreated pollutants which could violate applicable water quality standards
- To prevent the contamination of POTW sludge which would interfere with selected sludge uses or disposal practices.

Locally developed limits are also necessary in cases where categorical standards have not yet been promulgated for an industry, the industry is not covered by categorical standards, or categorical standards are not adequate to protect the treatment plant, receiving stream, or sludge.

This appendix is intended to assist reviewers in understanding the pertinent considerations in calculating limits to implement these three objectives. The first section of the appendix outlines the general methodology for determining allowable pollutant loadings, choosing the appropriate level of protection, and allocating these loadings to dischargers. Sections 2, 3, and 4 present equations and guideline data that can be used to calculate the limiting pollutant concentration at the influent to the treatment plant that will protect the wastewater treatment processes, receiving water quality, and sludge disposal options. Section 5 includes equations used for determining pollutant loads allowable from all non-domestic dischargers; Section 6 discusses considerations for allocating this pollutant mass loading to individual dischargers; and Section 7 demonstrates the calculation of a discharge limit for one pollutant, copper, using a hypothetical example.

The methodology described here for determining allowable influent concentrations and setting industrial effluent limits is widely known and accepted. However, the basis for much of the material that appears in this appendix is from a document originally prepared by the State of Indiana and the USEPA Region V office. The original document has been reorganized and expanded to facilitate a better understanding of the information.

1.1 GENERAL METHODOLOGY

The impact of an incompatible pollutant on a POTW must be evaluated simultaneously from the three fundamental program objectives described above. The limit for the pollutant must then be set to ensure that all three objectives are met. It should be pointed out that the limiting factor that meets the most restrictive of the three objectives may vary from pollutant to pollutant. For example, at a particular POTW, constraints on the land application of sludge may limit the allowable influent concentration of cadmium, while effects on water quality may limit the influent concentration of copper. The hypothetical example provided at the end of this document will demonstrate the effect of these limiting factors on the influent pollutant limit for copper.

As a general procedure, influent concentration limits should be calculated for a particular pollutant based on each of the three factors (i.e., treatment processes, water quality, and sludge). The most stringent of the three will determine the influent limit to be used for that pollutant. The POTW will then have to translate that influent limit into discharge limits for its industrial users that discharge the pollutant into its sewerage system.

Although this document provides specific data on only cyanide and nine metallic pollutants, a POTW may receive other industrial pollutants with toxic characteristics. Industrial surveys and/or POTW sampling, if done properly, should identify the existence of such pollutants. Calculation of limits for such pollutants would follow the same general methodology as discussed in this appendix, although inhibition and removal data would have to be developed from other sources. It should be noted that this methodology does not account for any cumulative, synergistic, or antagonistic effects that may occur when several toxic pollutants are present simultaneously. Figure 1 is provided to show an overview of the steps used in developing pollutant discharge limitations. Table 1 provides definitions of all the symbols for concentrations, percent removals, and flow rates used in the calculation of specific effluent limits.

FIGURE 1

Flow Chart of the
Basic Steps to Develop
Pollutant Discharge Limitations

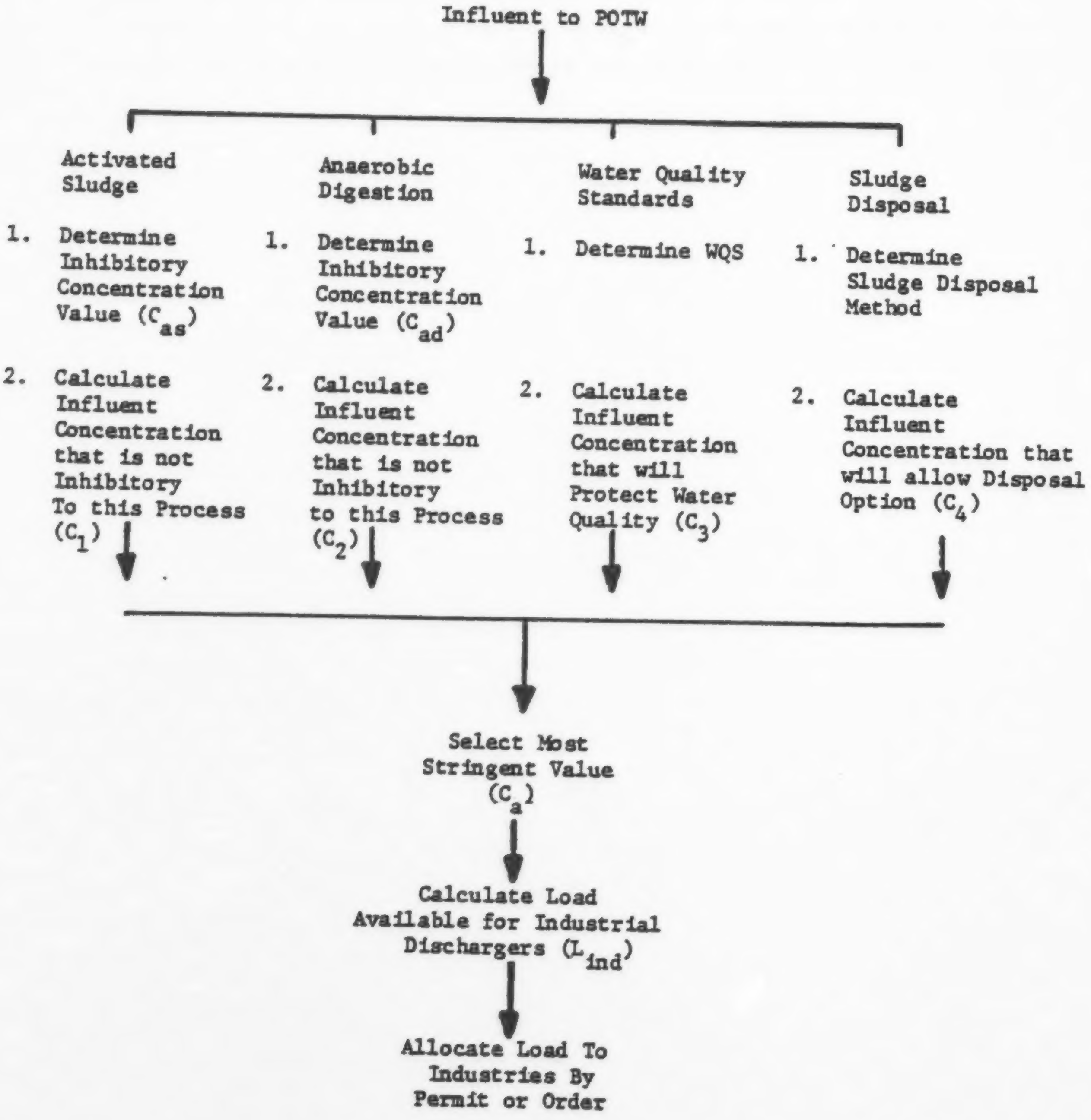
Influent to POTW
Activated Sludge
1. Determine Inhibitory Concentration Value (C_{as})
2. Calculate Influent Concentration that is not Inhibitory To this Process (C_1)
Anaerobic Digestion
1. Determine Inhibitory Concentration Value (C_{ad})
2. Calculate Influent Concentration that is not Inhibitory to this Process (C_2)
Water Quality Standards
1. Determine WQS
2. Calculate Influent Concentration that will Protect Water Quality (C_3)
Sludge Disposal
1. Determine Sludge Disposal Method
2. Calculate Influent Concentration that will allow Disposal Option (C_4)
Select Most Stringent Value (C_a)
Calculate Load Available for Industrial Dischargers (L_{ind})
Allocate Load To Industries By Permit or Order

TABLE 1.

DEFINITIONS OF SYMBOLS USED IN THE CALCULATION OF LOCAL EFFLUENT LIMITS FOR INCOMPATIBLE POLLUTANTS

L_{as} = maximum daily mass loading (lbs/day) to the activated sludge unit to prevent inhibition of activated sludge

L_1 = maximum allowable daily pollutant loading (lbs/day) to the POTW influent to prevent inhibition of activated sludge

L_{ad} = maximum allowable daily pollutant loading (lbs/day) to the sludge digestion unit to prevent inhibition of anaerobic sludge digestion

L_2 = maximum allowable daily pollutant loading (lbs/day) to the POTW influent to prevent inhibition of anaerobic sludge digestion

L_{eff} = maximum allowable pollutant loading (lbs/day) at the POTW effluent to protect receiving stream's water quality

L_3 = maximum allowable daily pollutant loading (lbs/day) to the POTW influent to protect quality of receiving stream

L_{ds} = maximum allowable daily pollutant loading (lbs/day) in the digested sludge based on sludge disposal criteria

L_4 = maximum allowable daily pollutant loading (lbs/day) to the POTW influent based on sludge disposal criteria

L_a = maximum allowable daily pollutant loading (lbs/day) to the POTW influent to protect all factors (this is selected as the lowest value of L_1, L_2, L_3, and L_4)

L_{non} = pollutant loading (lbs/day) from nonindustrial sources

L_{ind} = maximum pollutant loading (lbs/day) allowable from industries

C_{as} = threshold concentration limit (mg/l) at the activated sludge unit to prevent inhibition of activated sludge

C_1 = maximum allowable pollutant concentration (mg/l) at the POTW influent to prevent inhibition of activated sludge

C_{ad} = threshold concentration limit (mg/l) at the sludge digestion unit to prevent inhibition of anaerobic sludge digestion

C_2 = maximum allowable pollutant concentration (mg/l) at the POTW influent to prevent inhibition of anaerobic sludge digestion

TABLE 1. (continued)

DEFINITIONS OF SYMBOLS USED IN THE CALCULATION OF LOCAL EFFLUENT LIMITS FOR INCOMPATIBLE POLLUTANTS

C_{eff} = maximum allowable pollutant concentration (mg/l) at the POTW effluent to protect receiving stream's water quality

C_3 = maximum allowable pollutant concentration (mg/l) at the POTW influent to protect quality of receiving stream

C_4 = maximum allowable pollutant concentration (mg/l) at the POTW influent based on sludge disposal criteria

C_a = maximum allowable pollutant concentration (mg/l) at the POTW influent to protect all factors (this is selected as the lowest value of C_1, C_2, C_3, and C_4)

C_{wq} = in-stream water quality standard (mg/l)

C_{non} = background pollutant concentration (mg/l)

C_{ind} = maximum allowable pollutant concentration (mg/l) for industries

Q = POTW average influent flow rate (mgd)

Q_2 = POTW average secondary flow rate (mgd)

Q_{ad} = average flow rate (mgd) into the anaerobic sludge digestion unit

Q_{str} = critical low flow (mgd) of receiving stream

Q_d = POTW design flow (mgd)

Q_s = volume of digested sludge to be disposed of (mgd)

Q_{non} = nonindustrial flow (mgd)

Q_{ind} = total industrial flow rate (mgd)

$$\text{Dilution Factor} = \frac{Q_{str} + (Q_d - Q_s)}{(Q_d - Q_s)}$$

Sludge Quality (dry weight basis in mg/kg) = $Lds/8.34/Q_s/D$

R_p = removal rate of pollutant in primary treatment (expressed as a decimal)

TABLE 1. (continued)

DEFINITIONS OF SYMBOLS USED IN THE CALCULATION OF LOCAL EFFLUENT LIMITS FOR INCOMPATIBLE POLLUTANTS

R_t = typical POTW total removal rate for a specific pollutant, including primary and secondary removal (expressed as a decimal)

8.34 = conversion factor

L = maximum metal addition allowed per acre by Federal and/or State regulations

A = amount of acres committed for the land application of the digested sludge

T = estimated time of site use (years)

D = percent solids in digested sludge

2.0 PREVENTION OF INHIBITION OF TREATMENT PROCESSES

One of the primary objectives of the National Pretreatment Program is to prevent the discharge to a POTW of incompatible pollutants that would interfere with or inhibit the POTW's operation. In the case of cyanides, "heavy" metals, and other toxic pollutants, treatment plant upsets could result if the toxicity of the pollutant is great enough to inhibit the microbial activity of the treatment system. This would cause a decrease in the pollution removal efficiency of a biological treatment facility. Pollutant discharge limits should be set to maintain the concentration of each toxic pollutant below the inhibition threshold of the treatment unit.

2.1 ACTIVATED SLUDGE PROCESSES

To calculate a discharge limit that will prevent inhibition of activated sludge processes, it is necessary to start with the inhibition threshold concentration (C_{as}) for the pollutant of interest. Table 2 lists threshold concentrations for inhibitory effects of several metallic pollutants and cyanide on activated sludge processes, nitrification processes, and anaerobic sludge digestion. These inhibitory values are taken from technical literature and the experience of States and municipalities. Plant-specific data for the POTW's treatment plants would be more valid, but the Table may be used when this information is unavailable.

Some qualifications to the data in Table 2 should be noted. The concentrations reported in Table 2 are for the dissolved form of the metals. If the actual proportion of dissolved to total metal is not known, these values in Table 2 should be used in the calculation of pollutant limits in place of concentrations of total metals.

TABLE 2.

THRESHOLD CONCENTRATIONS* OF TOXIC POLLUTANTS THAT INHIBIT BIOLOGICAL TREATMENT PROCESSES

Toxic Pollutant	Threshold of Inhibitory Effect on Activated Sludge	Threshold of Inhibitory Effect on Nitrification	Threshold of Inhibitory Effect on Anaerobic Sludge Digestion
Arsenic	0.05 mg/l		1.5 mg/l
Cadmium	1.0 mg/l		0.02 mg/l
Chromium (total)	10 mg/l		100 mg/l
Chromium (hex)	1.0 mg/l		50 mg/l
Copper	1.0 mg/l	0.1 mg/l	10 mg/l
Cyanide	0.1 mg/l	0.5 mg/l	4 mg/l
Lead	0.1 mg/l	0.5 mg/l	
Mercury	0.1 mg/l		
Nickel	1.0 mg/l	0.5 mg/l	10 mg/l
Zinc	1.0 mg/l	0.1 mg/l	20 mg/l

*Concentrations are specified at influent of the unit process in dissolved form.

References: (1), (3), and (5)

Using this inhibition threshold concentration from the Table, the maximum daily mass loading (L_{as}) of the pollutant to the activated sludge unit to prevent inhibition can be calculated by:

$$L_{as} = (C_{as})(Q_2)(8.34)$$

Where: L_{as} = the maximum daily mass loading (lbs/day) to the activated sludge unit to prevent inhibition of activated sludge

C_{as} = the threshold concentration limit (mg/l) at the activated sludge unit to prevent inhibition of activated sludge

Q_2 = POTW average secondary flow rate (mgd)

8.34 = conversion factor

Next, the maximum allowable daily pollutant loading (L_1) at the influent of the treatment plant to prevent inhibition can be obtained by adjusting for removal through the primary treatment unit. The calculation involves the primary removal rate of the POTW. Table 3 provides typical removal rates through primary treatment and secondary treatment for several common metallic pollutants. Again, plant-specific data are more valid and should be used by the POTW to derive removal rates if at all possible.

$$L_1 = \frac{L_{as}}{(1-R_p)}$$

Where: L_1 = maximum allowable daily pollutant loading (lbs/day) to the POTW influent to prevent inhibition of activated sludge

L_{as} = maximum daily pollutant loading (lbs/day) to the activated sludge unit to prevent inhibition of activated sludge

R_p = removal rate of pollutant in primary treatment (expressed as a decimal)

TABLE 3.

TYPICAL POTW REMOVAL RATES FOR INCOMPATIBLE POLLUTANTS

Toxic Pollutant	Percent Removal Through Primary Treatment	Percent Removal Through Primary and Secondary Units
	(Median Value)[1]	(Median Value)[2]
Cadmium	7	50
Chromium	16	71
Copper	18	82
Cyanide	—	56
Lead	20	57
Mercury	22	51
Nickel	6	32
Zinc	26	76

[1] References: (1), Vol. 1, page F-10

[2] Reference: (2)

The maximum allowable pollutant concentration (C_1) at the influent of the treatment plant can be found by dividing the maximum influent pollutant loading by the influent flow to the POTW:

$$C_1 = \frac{L_1}{(Q)(8.34)}$$

Where: C_1 = maximum allowable pollutant concentration (mg/l) at the POTW influent to prevent inhibition of activated sludge

L_1 = maximum allowable daily pollutant loading (lbs/day) to the POTW influent to prevent inhibition of activated sludge

Q = POTW average influent flow rate (mgd)

8.34 = conversion factor

Either L_1, expressed in pounds, or C_1, expressed in concentration, can be used as one of the bases for comparing treatment plant protection criteria with alternative pollutant limits developed to achieve other objectives such as protection of water quality and sludge quality.

2.2 ANAEROBIC SLUDGE DIGESTION

To calculate a discharge limit that will prevent inhibition of anaerobic sludge digestion, it is also necessary to start with the inhibition threshold concentration (C_{ad}) for the pollutant of interest (Table 1 or plant specific data). From this concentration, the daily mass loading of the pollutant to prevent inhibition of the anaerobic sludge digestion processes can be calculated by:

$$L_{ad} = (C_{ad})(Q_{ad})(8.34)$$

Where: L_{ad} = maximum allowable daily pollutant loading (lbs/day) to the sludge digestion unit to prevent inhibition of anaerobic sludge digestion

C_{ad} = threshold concentration limit (mg/l) at the sludge digestion unit to prevent inhibition of anaerobic sludge digestion

Q_{ad} = average flow rate into the anaerobic sludge digestion unit (mgd)

8.34 = conversion factor for the weight (in pounds) of 1 gallon of water

Next, the maximum allowable daily pollutant loading (L_2) at the influent of the plant to prevent inhibition can be obtained by adjusting for removal through the entire plant. The calculation involves the total removal rate of the primary and secondary units (plant-specific data is more valid, and should be used by the POTW in deriving removal rates if available):

$$L_2 = \frac{L_{ad}}{R_t}$$

Where: L_2 = maximum allowable daily pollutant loading (lbs/day) to the POTW influent to prevent inhibition of anaerobic sludge digestion

L_{ad} = maximum allowable daily pollutant loading (lbs/day) to the sludge digestion unit to prevent inhibition of anaerobic sludge digestion

R_t = typical POTW total removal rate for a specific pollutant, including primary and secondary removal (expressed as a decimal)

The maximum allowable pollutant concentration at the influent of the plant (C_2) is obtained by dividing the maximum influent load (L_2) by the weight of the influent flow to the POTW:

$$C_2 = \frac{L_2}{(Q)(8.34)}$$

Where: C_2 = maximum allowable pollutant concentration (mg/l) at the POTW influent to prevent inhibition of anaerobic sludge digestion

L_2 = maximum allowable pollutant mass loading (lbs/day) to the POTW influent to prevent inhibition of anaerobic sludge digestion

Q = POTW average influent flow rate (mgd)

Again, either loading (L_2) or concentration (C_2) can be used as the basis for comparing protection of anaerobic sludge digestion with alternative pollutant limits developed to protect water quality and sludge quality.

3.0 PROTECTION OF RECEIVING STREAM'S WATER QUALITY

The second objective of the National Pretreatment Program is to prevent the pass-through of incompatible pollutants, which could violate applicable water quality standards. Pollutant discharge limits should be developed to ensure that water quality standards are not violated by the POTW.

EPA and State publications contain information on the effects of toxic pollutants on receiving water quality. The main problems caused by toxic pollutants are the restriction of domestic and industrial uses of surface water, toxicity to aquatic organisms, and the accumulation of toxics in the food chain. Also, there has been recent concern about trace organics that are carcinogenic to humans. Exhibit A summarizes water quality criteria for 21 priority pollutants contained in EPA's Ambient Water Quality Criteria, Series (1), as published in the November 28, 1980, Federal Register. These new criteria have replaced those formerly established in the 1976 edition of Quality Criteria for Water (the "Red Book"). The criteria were derived by using "guidelines," which, theoretically, would ensure protection of aquatic health and human health. Officially, the criteria are only recommended values; they are not enforceable as water quality standards. However, they do provide useful documentation in the interpretation of State water quality standards.

To calculate the maximum allowable pollutant loading to the POTW's treatment plants that will protect the receiving water quality from degradation, the POTW has to determine the in-stream water quality standard (C_{wq}) for the pollutant of interest. This may be available from the State water quality agency. Otherwise, data from Exhibit A may need to be used even though they are not specific and may be too stringent. The maximum allowable pollutant concentration in the POTW's effluent (C_{eff}) can then be calculated, taking into account the dilution factor of the receiving stream, as follows:

$$C_{eff} = (C_{wq})(\text{Dilution factor})$$

Where: C_{eff} = maximum allowable pollutant concentration (mg/l) at the POTW effluent to protect receiving stream's water quality

C_{wq} = in-stream water quality standard (mg/l)

$$\text{Dilution Factor} = \frac{Q_{str} + (Q_d - Q_s)}{Q_d - Q_s}$$

Where: Q_{str} = critical low flow of receiving stream (mgd)

Q_d = POTW design flow (mgd)

Q_s = volume of sludge to be disposed of (mgd)

It is important to note that if a POTW does not operate near its design flow (or capacity), then the actual flow (Q) must be used in place of Q_d.

The maximum allowable pollutant loading (L_{eff}) at the POTW's effluent can be calculated by converting concentration to mass, as follows:

$$L_{eff} = (C_{eff})(Q_d - Q_s)(8.34)$$

Where: L_{eff} = maximum allowable pollutant loading (lbs/day) at the POTW effluent to protect of receiving stream's water quality

C_{eff} = maximum allowable pollutant concentration (mg/l) at the POTW effluent to protect receiving stream's water quality

Q_d = POTW design flow (mgd)

Q_s = volume of digested sludge to be disposed of (mgd)

8.34 = conversion factor

The maximum allowable daily pollutant loading (L_3) to the influent of the treatment plant can be obtained by adjusting L_{eff} for removal of the pollutant through the primary and secondary treatment processes of the POTW, as follows:

$$L_3 = \frac{L_{eff}}{1-R_t}$$

Where: L_3 = maximum allowable daily pollutant loading (lbs/day) to the POTW influent to protect quality of receiving stream

L_{eff} = maximum allowable pollutant loading (lbs/day) at the POTW effluent to protect receiving stream's water quality

R_t = typical POTW total removal rate for a specific pollutant, including primary and secondary removal (expressed as a decimal)

Finally, the maximum allowable pollutant concentration (C_3) at the influent of the POTW can be calculated using the formula:

$$C_3 = \frac{L_3}{(Q)(8.34)}$$

Where: C_3 = maximum allowable pollutant concentration at the POTW influent (mg/l) to protect quality of receiving stream

L_3 = maximum allowable daily pollutant loading (lbs/day) to the POTW influent to protect quality of receiving stream

Q = POTW average influent flow rate (mgd)

4.0 PROTECTION OF SLUDGE QUALITY

The last major objective of the National Pretreatment Program is the generation of sludge that is compatible with the overall sludge management program and consistent with the selected disposal option of the POTW. Pollutant discharge limits should be calculated so that the POTW sludge remains compatible with the selected disposal option. There are three basic methods POTWs utilize for sludge disposal at the present time:

- Incineration
- Landfilling
- Land application.

Each of these methods has differing costs and benefits associated with its use. For this reason, the required sludge quality and degree of pretreatment needed will also vary.

4.1 INCINERATION

Incineration of sludges with high concentrations of priority pollutants can volatilize organics and metals. Little information exists on the release of these pollutants into the air during incineration. What is known about incineration is that it is very expensive to operate and requires an air pollution control permit. If incineration is the disposal option used, the POTW should sample and analyze the resulting ash to determine if the ash quality is compatible with its disposal method.

4.2 LANDFILL DISPOSAL

The determining factor for landfill disposal is whether the sludge is classified as a hazardous waste. In order to assure that a particular sludge is not a hazardous waste, the EP (extraction procedure) toxicity test must be performed. Cadmium is the pollutant that most often causes a municipal wastewater treatment plant sludge to be classified as a hazardous waste. When this disposal method is used by the POTW, the sludge leachate should be sampled and analyzed when there is a possibility that the leachate may contaminate or degrade groundwater or surface water resources.

4.3 LAND APPLICATION

In order to predict the sludge quality needed for land application, plant operational data must be analyzed, and land quality and quantity must be determined. The POTW should know the general soil type and Cation Exchange Capacity (CEC) of the land application site. Table 4 provides Federal guidelines for loading limitations on land application of metal-containing sludge. In addition, each State may have its own land application limitations. Both Federal and State rules should be evaluated in determining necessary sludge quality and allowable pollutant loads to the treatment plant. These limitations should be utilized by the POTW to find the maximum metal addition per acre (L) for a specific contaminant.

Once this loading limit is found, the amount of acreage available (A) and the length of time of site use (T) must be determined so that the daily loading limit of the pollutant in the sludge can be calculated as follows:

$$L_{ds} = \frac{(L)(A)}{(T)(365)}$$

Where: L_{ds} = maximum allowable daily pollutant loading (lbs/day) in the digested sludge based on sludge disposal criteria

L = maximum metal addition allowed per acre by Federal and/or State regulations

A = amount of acres committed for the land application of digested sludge

T = estimated time of site use (years)

Next, the maximum allowable daily pollutant loading (L_4) to the influent of the treatment plant to ensure appropriate sludge quality for land application can be calculated by adjusting for removal through the entire plant.

$$L_4 = \frac{L_{ds}}{R_t}$$

Where: L_4 = maximum allowable daily pollutant loading (lbs/day) to the POTW influent based on sludge disposal criteria

L_{ds} = maximum allowable daily pollutant loading (lbs/day) in the digested sludge based on sludge disposal criteria

R_t = typical POTW total removal rate for a specific pollutant including primary and secondary removal (expressed as a decimal)

The maximum allowable pollutant concentration at the influent of the plant (C_4) can be found by dividing the maximum influent pollutant loading by the weight of the influent flow to the POTW:

$$C_4 = \frac{L_4}{(Q)(8.34)}$$

Where: C_4 = maximum allowable pollutant concentration (mg/l) at the POTW influent based on sludge disposal criteria

L_4 = maximum allowable daily pollutant loading (lbs/day) at the POTW influent based on sludge disposal criteria

Q = POTW average influent flow rate (mgd)

The amount of a specific pollutant (dry weight basis) expected to be found in the digested sludge can be obtained from the following formula:

Sludge quality (dry weight in mg/kg) = $L_{ds}/8.34/Q_s/D$

Where: L_{ds} = maximum allowable daily pollutant loading (lbs/day) in the digested sludge based on sludge disposal criteria

Q_s = volume of digested sludge to be disposed of (mgd)

D = percent solids in digested sludge

TABLE 4.

REQUIREMENTS FOR SLUDGE APPLICATION TO AGRICULTURAL LAND

PRIMARY REQUIREMENT - NITROGEN

1. Sludge application rates should provide total plant available nitrogen fertilizer requirement of the crop growth and the requirement to prevent nitrate pollution of groundwater.

ADDITIONAL REQUIREMENTS - TRACE METAL ELEMENTS

1. Maximum annual Cd loading:

• Jan. 1, 1981 to Dec. 31, 1985	1.25 kg/ha
• Beginning Jan. 1, 1986	0.50 kg/ha

2. Soil/sludge pH control

- pH of sludge amended soil should be maintained at 6.5 or greater

3. Total cumulative metal loading (kg/ha):

	Cation Exchange Capacity (meq/100 gm)		
Element	0-5	5-15	>15
Pb	500	1000	2000
Zn	250	500	1000
Cu	125	250	500
Ni	50	100	200
Cd	5	10	20

4. Cd/Zn ratio of sludge applied should be less than 0.015 in naturally acidic soils.

Derived from Ref. (7).

5.0 DISCHARGE LIMITS

At this point, the effect of a pollutant on treatment plant processes, water quality, and sludge quality has been evaluated. Maximum allowable pollutant concentrations (C_1, C_2, C_3, and C_4) — and allowable daily loadings (L_1, L_2, L_3, and L_4) — at the influent of the treatment plant have been calculated to achieve each of the three protection objectives of the National Pretreatment Program. To protect the most sensitive process or factor, the most stringent of these levels should be chosen and used in further calculations of pollutant limits for industrial dischargers. Either the concentration (mg/l) or the loading (lbs/day) can be used for comparison. The results of this comparison would be:

C_a = maximum allowable pollutant concentration (mg/l) at the POTW influent to protect all factors (this is selected as the lowest value of C_1, C_2, C_3, and C_4); and

L_a = maximum allowable daily pollutant loading (lbs/day) to the POTW influent to protect all factors (this is selected as the lowest value of L_1, L_2, L_3, and L_4).

The maximum pollutant loading that can be discharged by industrial users into the sewerage system is determined by subtracting the background pollutant loading from nonindustrial sources in the system from the maximum allowable pollutant loading at the POTW's influent. Table 5 gives data on background concentrations of various pollutants in raw sewage coming from domestic and other nonindustrial sources. The background concentrations for these pollutants are characteristic of nonindustrial sewage. Sampling and analysis of nonindustrial interceptors to the treatment system should be conducted to provide more specific data on background concentrations. The pollutant loading from nonindustrial sources (L_{non}) is calculated by multiplying the background pollutant concentration (C_{non}) (found in Table 5) times the nonindustrial flow (Q_{non}) times 8.34.

$$L_{non} = (C_{non})(Q_{non})(8.34)$$

TABLE 5.

TYPICAL BACKGROUND CONCENTRATIONS* OF TOXIC POLLUTANTS IN NONINDUSTRIAL SEWAGE (C_{non}) (INCLUDES DOMESTIC AND COMMERCIAL SEWAGE)

Toxic Pollutant	"Background" Concentration
Arsenic	0.014 mg/1
Cadmium	0.01 mg/1
Chromium (total)	0.2 mg/1
Chromium (hex)	0.2 mg/1
Copper	0.1 mg/1
Cyanide	0.025 mg/1
Lead	0.1 mg/1
Nickel	0.05 mg/1
Zinc	0.5 mg/1

*Concentrations are total pollutants except where otherwise indicated.

References: (4) and (5)

Then maximum pollutant loading from industries (L_{ind}) is:

$$L_{ind} = L_a - L_{non}$$

Where: L_{ind} = maximum pollutant loading (lbs/day) allowable from industries

L_a = maximum allowable daily pollutant loading (lbs/day) at the POTW influent to protect all factors (this is the lowest value of l_1, l_2, l_3, and l_4)

L_b = pollutant loading (lbs/day) from nonindustrial sources

C_{non} = background pollutant concentration (mg/l)

Assuming the POTW wants to apply the same concentration-based limit to all industrial dischargers into the sewer system, the maximum allowable pollutant loading from industries (L_{ind}) can be converted into the maximum allowable pollutant concentration for industry by dividing by the weight of the industrial flow.

$$C_{ind} = \frac{L_{ind}}{(8.34)\ (Q_{ind})}$$

Where: C_{ind} = maximum allowable pollutant concentration (mg/l) for industries

L_{ind} = maximum pollutant loading (lbs/day) allowable from industries

Q_{ind} = total industrial flow rate (mgd)

6.0 ALLOCATION OF THE POLLUTANT LOAD TO INDUSTRY

The final step in the process of setting effluent limitations is to allocate the maximum pollutant loading to the treatment plant to the individual industrial dischargers. This may be accomplished in several ways, as discussed below.

6.1 ALTERNATIVE METHODS

- Single concentration or mass limit: A single concentration or mass limitation can be established, which no industrial user can exceed, and, when domestic contribution is taken into account, will not exceed the allowable influent loading. This method corresponds to the example calculation shown in Section 5 of the appendix. A single limit for all users may be easier to regulate and enforce.
- Proportionate: Allocation can be accomplished proportionately, using each industrial user's flow rate to divide up the allowable pollutant discharge. However, if the flow is based on water usage, this method penalizes the industrial user that recycles or reuses some portion of its wastewater. This method may be desirable when there are only a few dischargers of a given pollutant in the entire industrial community.
- Technology-based: Technology-based limitations are developed by considering wastewater treatment systems for each particular industrial user that are best suited to that IU's wastewater. Information on state-of-the art treatment system performance can be obtained from development documents and contractor's documents supporting effluent limitations guidelines and standards.

6.2 OTHER CONSIDERATIONS

- Growth - Expansion must also be considered in the POTW service area when allocating pollutant loading. Expansion can include domestic contributions where future population growth can cause overloads of compatible pollutants, as well as future industrial contribution. If land has been zoned for industrial parks or other developments, POTWs must allocate a certain portion of the allowable influent loading to this planned expansion.
- Design - Proposed or planned design changes in the treatment plant should be taken into account when developing and setting industrial effluent limitations. For example, nitrification is a more sensitive process than activated sludge for some pollutants. A POTW planning to upgrade would need to develop protection criteria for this process if it is the limiting factor for some pollutants. Industrial discharge limits might then have to be made more stringent to protect the new

design. Industrial users should be kept informed of such plans and developments so that pretreatment technologies can be kept appropriate over time.

7.0 A HYPOTHETICAL POTW EXAMPLE

For reasons of brevity and simplicity, this example of calculating the allowable influent loading to a POTW only addresses one pollutant, copper. However, since the appropriate data is provided to calculate discharge limits for several other pollutants of concern, Table 6 presents the calculated results for these pollutants. Calculations for these pollutants of concern are not shown.

The hypothetical POTW utilizes an activated sludge unit for secondary treatment and anaerobic digestion of sludge. POTW sludge is applied on nearby farmland. The relevant data for the POTW are:

Qd - POTW design flow: 5 mgd

Q - POTW average influent flow rate: 5 mgd

Q_{str} - Critical low flow of receiving stream: 15.5 mgd

Q_{ad} - Average flow rate into the anaerobic digestion unit: 0.05 mgd

Q_s - Volume of digested sludge to be disposed of: 0.025 mgd

D - Percent solids in digested sludge: 5%

A - Amount of acres committed for the land application of digested sludge: 100 acres

T - Estimated time of site use: 10 years

Q_{ind} - Average flow from industries with metal discharges: 0.2 mgd

Q_{non} - Average flow from domestic and other industrial sources: 4.8 mgd

The POTW is located in Indiana, so the water quality standards and land application criteria used in this example are Indiana State standards. These standards, or other assumptions needed to perform the calculations, are stated in the text as they are used.

7.1 CALCULATING MAXIMUM ALLOWABLE POLLUTANT LOAD TO THE POTW - COPPER

A. Preventing Inhibition of Treatment Plant Processes

To determine the influent concentration of copper that will protect the treatment plant, the POTW must perform the calculations for both the activated sludge process and the anaerobic digestion process to find the lesser inhibiting concentration.

(1) Activated sludge process

(a) The maximum allowable pollutant loading (lbs/day) at the activated sludge unit (L_{as}) is found by converting the threshold concentration from Table 2 into mass:

$L_{as} = (C_{as})(Q_2)(8.34)$

$L_{as} = (1 \text{ mg/l})(5 \text{ mgd})(8.34)$

$L_{as} = 41.7 \text{ lbs/day}$

(b) The maximum daily pollutant load (L_1) at the influent to the POTW is calculated by adjusting for removal of copper in the primary treatment processes from Table 3:

$L_1 = L_{as}/(1-R_p)$

$L_1 = 41.7/(1-.18)$

$L_1 = 41.7/.82$

$L_1 = 50.85 \text{ lbs/day to POTW}$

(c) The maximum pollutant concentration (C_1) at the influent to the POTW is found by converting mass to concentration:

$C_1 = L_1/Q\ (8.34)$

$C_1 = 50.8/[5\ (8.34)]$

$C_1 = 50.8/41.7$

$C_1 = 1.22 \text{ mg/l}$

(2) Anaerobic sludge digestion

(a) As above, the maximum allowable pollutant loading (lbs/day) at the anaerobic digester (L_{ad}) is found by converting the threshold concentration from Table 2 into mass:

$$L_{ad} = (C_{ad})(Q_{ad})(8.34)$$
$$L_{ad} = (10)(0.05)(8.34)$$
$$L_{ad} = 4.17 \text{ lbs/day}$$

(b) The maximum allowable daily pollutant load (L_2) at the influent to the POTW is calculated by accounting for total removal (Table 3) achieved by the plant:

$$L_2 = L_{ad}/R_t$$
$$L_2 = 4.17/.82$$
$$L_2 = 5.08 \text{ lbs/day}$$

(c) The maximum allowable pollutant concentration (C_2) at the influent to the POTW is found by converting this mass into a concentration:

$$C_2 = L_2/[Q\ (8.34)]$$
$$C_2 = 5.08/[5\ (8.34)]$$
$$C_2 = 5.08/41.7$$
$$C_2 = 0.12 \text{ mg/l}$$

B. Protection of Receiving Water Quality

To protect the receiving water, the POTW must first know that the in-stream water quality standard (C_{wq}) for copper in Indiana is 0.02 mg/l.

(1) In order to determine how much copper the POTW can discharge to this stream, the dilution factor must first be calculated using the POTW data on page A-23:

$$\text{Dilution factor} = \frac{Q_{str} + (Q_d - Q_s)}{Q_d - Q_s}$$

$$= \frac{15.5 \text{ mgd} + 4.975 \text{ mgd}}{4.975 \text{ mgd}}$$

Dilution Factor = 4.1 (a dimensionless factor)

(2) The maximum allowable pollutant concentration (C_{eff}) at the POTW's effluent can then be calculated using the equation from Section 3:

$$C_{eff} = (C_{wq})(\text{Dilution factor})$$
$$C_{eff} = (0.02 \text{ mg/l})(4.1)$$
$$C_{eff} = 0.082 \text{ mg/l}$$

(3) The maximum allowable pollutant loading (L_{eff}) at the POTW's effluent is determined by converting concentration to mass:

$$L_{eff} = (C_{eff})(Q_d-Q_s)(8.34)$$
$$L_{eff} = (0.082 \text{ mg/l})(4.975 \text{ mgd})(8.34)$$
$$L_{eff} = 3.4 \text{ lbs/day}$$

(4) The maximum allowable daily pollutant load (L_4) at the POTW's influent is determined by adjusting for primary and secondary removals of copper:

$$L_3 = L_{eff}/1-R_t$$
$$L_3 = (3.4 \text{ lbs/day})/(1-0.82)$$
$$L_3 = 18.89 \text{ lbs/day}$$

(5) The maximum allowable pollutant concentration (C_4) at the POTW's influent is obtained by converting mass to concentration:

$$C_3 = L_4/(Q)(8.34)$$
$$C_3 = 18.89 \text{ lbs/day}/(5 \text{ mgd})(8.34)$$
$$C_3 = 0.454 \text{ mg/l}$$

C. Maximum Pollutant Loading for Land Application

The maximum amount of metal addition for the lifetime use of the site is obtained from Table 4. The example POTW disposes of its sludge on a medium textured soil with a Cation Exchange Capacity of 9.3 meq/100 gm. From Table 4, the maximum metal loading limit for copper is 250 kg/ha, or 223 pounds per acre.

(1) The allowable daily loading (lbs/day) of copper in the digested sludge (L_{ds}) can be calculated using the soil capacity loading data shown above:

$L_{ds} = [L \div (T \times 365)] \times A$
$L_{ds} = [223 \div (10 \times 365)] \times 100$
$L_{ds} = 6.11$ lbs/day

(2) The amount of copper (dry weight) present in the sludge can be calculated using the POTW data on page A-23:

Sludge quality $= L_{ds} \div 8.34 \div Q_s \div D$
" $= 6.11 \div 8.34 \div 0.025 \div 0.05$
Sludge quality = 586 mg/kg of copper

(3) The maximum allowable loading (lbs/day) of copper at the influent (L_3) is calculated using the total removal rate from Table 3:

$L_4 = L_{ds} \div R_t$
$L_4 = 6.11 \div 0.82$
$L_4 = 7.45$ lbs/day

(4) The maximum allowable concentration of copper at the influent (C_3) is found by converting loading to concentration:

$C_4 = L_3 \div (8.34 \times Q_d)$
$C_4 = 7.45 \div (8.34 \times 5)$
$C_4 = .179$ mg/l

7.2 CHOOSING THE LIMITING INFLUENT CONCENTRATION

After performing these calculations, the POTW has four different influent copper concentration (or loading) values designed to protect the activated sludge process, the anaerobic digestion process, the receiving water, and the farmland that receives the sludge, respectively:

Allowable Copper Concentrations	Daily Copper Loadings
$C_1 = 1.22$ mg/l	$L_1 = 50.85$ lbs/day
$C_2 = 0.12$ mg/l	$L_2 = 5.08$ lbs/day
$C_3 = 0.454$ mg/l	$L_3 = 18.89$ lbs/day
$C_4 = .179$ mg/l	$L_4 = 7.45$ lbs/day

The POTW must now select the lowest of these values to protect the most sensitive factor. This example shows that, for copper at this hypothetical POTW, the anaerobic digester is the limiting factor. In this case:

$C_a = C_2 = 0.12$ mg/l; and

$L_a = L_2 = 5.08$ lbs/day.

The POTW cannot accept an influent concentration, or load, greater than this without possible adverse effects on its anaerobic digestion process. This concentration value, C_a, can be found in the upper half of Table 6 for copper and six other pollutants. The most stringent, or limiting concentrations, are underlined for each pollutant.

7.3 ALLOCATING THE POLLUTANT LOAD

The POTW must now determine how much copper can be discharged by local industries (L_{ind}) by allocating the total allowable load (L_a) among all existing dischargers of copper. As page A-23 shows, only a small portion of the influent comes from known dischargers of metals (Q_{ind}). However, copper loadings from nonindustrial sources (L_{non}) must be taken into consideration before determining the amount allowable from industries.

TABLE 6.

HYPOTHETICAL POTW EXAMPLE: SPECIFIC LIMIT CALCULATIONS FOR METALLIC POLLUTANTS

Maximum Concentration of Pollutant Allowable at POTW Influent (in mg/l) (C_a**)

	Activated Sludge(C_1)	Anaerobic Digestion(C_2)	WQS(C_3)	Land Application(C_4)
Cadmium	1.075	0.0004	0.163	0.0118
Chromium, Total	11.9	1.4	3.52	—
Copper	1.22	0.12	0.454	0.179
Cyanide	0.1	0.07	0.232	—
Lead	0.13	—	0.48	1.0
Nickel	1.1	0.3	3.0	0.46
Zinc	1.4	0.26	17.1	0.387

Pounds of Pollutant Allowable to Industry (L_{ind}**)

	Activated Sludge(C_1)	Anaerobic Digestion(C_2)	WQS(C_3)	Land Application(C_4)
Cadmium	44.4	-0.38*	6.4	0.09
Chromium, Total	488.4	50.72	139.1	—
Copper	46.9	1.08	14.9	3.5
Cyanide	3.2	2.0	8.7	—
Lead	1.2	—	15.8	39.0
Nickel	42.4	0.0	123.5	17.1
Zinc	36.3	-9.0*	690.9	-3.8*

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*Apparently, these negative numbers were derived in the calculations because background concentrations of cadmium and zinc were already high.

**The most stringent value in each row is underlined to show the limiting factor.

(1) The pollutant loading from nonindustrial sources (L_{non}) is found by multiplying the background pollutant concentration of copper (found in Table 5) by the nonindustrial flow (Q_{non}) times the conversion factor:

$$L_{non} = (C_{non})(Q_{non})(8.34)$$
$$L_{non} = (0.1 \text{ mg/l})(4.8 \text{ mgd})(8.34 \text{ lbs/gal})$$
$$L_{non} = 4.00 \text{ lbs/day}$$

(2) Then the maximum allowable loading from industrial sources (L_{ind}) can be found simply by subtraction:

$$L_{ind} = L_a - L_{non}$$
$$L_{ind} = 5.08 \text{ lbs/day} - 4.00 \text{ lbs/day}$$
$$L_{ind} = 1.08 \text{ lbs/day}$$

This value for copper can be found in the second column, lower half of Table 6, which shows the loading of pollutants allowable from industrial sources calculated from the most stringent concentration (C_a) chosen from above. Allowable industrial loadings for the six other pollutants are also shown. For this example, at least, anaerobic digestion was the limiting factor for all pollutants except lead.

The POTW must now decide how to regulate its industrial dischargers to achieve this allowable loading. Some of the alternatives that can be considered are presented in Part 6 of this appendix. If the POTW chooses to apply a uniform concentration limit and allows for no growth, the example becomes simple.

(3) The allowable industrial loading (L_{ind}) can be converted to the concentration allowable from industrial sources (C_{ind}) as follows:

$$C_{ind} = L_{ind}/[(Q_{ind})(8.34)]$$
$$C_{ind} = (1.08 \text{ lbs/day})/[(0.2 \text{ mgd})(8.34 \text{ lbs/gal})]$$
$$C_{ind} = 0.65 \text{ mg/l}$$

This concentration limit can be applied to industrial dischargers through a general legal mechanism, such as an ordinance, or through a specific requirement in a discharge permit, order, or contract.

REFERENCES

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(9) "Procedures Manual for Reviewing a POTW Pretreatment Program Submission -- Draft," JRB Associates, USEPA Contract No. 68-01-5052 (November 1981).